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MEMOIR

OF

GEORGE WILSON

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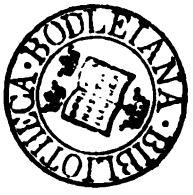

EDINBURGH: T. CONSTABLE,
PRINTER TO THE QUEEN, AND TO THE UNIVERSITY

To my Mother,

THESE MEMORIALS OF THE PAST

ARE

AFFECTIONATELY DEDICATED.

"BLESSED ARE THEY WHO ARE CALLED TO THE MARRIAGE SUPPER OF THE LAMB."

PREFACE.

THE following Memoir has been undertaken at the urgent solicitation of friends. Dreading the temptations to partial—and therefore untruthful—representation, to which relatives are exposed in attempting to portray the character of the objects of their love, I at first resolutely declined to be the Biographer of my brother. It was only when one to whom the public instinctively looked with hope, the Rev. Dr. Cairns, expressed reluctantly, but decisively, his inability to undertake the sacred task, that my scruples were overcome; and the result is now before the reader.

While an honest and earnest attempt has been made throughout after truthful simplicity of narration, all expression of personal opinion has been as far as possible avoided. In fact, the mass of letters at my disposal has made the Life in great part an autobiography.

I have to acknowledge, with much gratitude, assistance received from the scientific friends whose names appear as contributors to the volume, and also the great kindness with which they and others have placed letters and private papers freely at my service.

To my brother, Dr. Daniel Wilson, I am indebted for hearty co-operation and assistance. The proof-sheets have been sub-

mitted to him, and to others fully competent to judge of the representation given, and now go forth with their sanction and approval.

May He who has given strength to complete a record, written under the shadow of heavy grief, be pleased to add His abundant blessing, and to illustrate afresh one of the laws of His kingdom: "That which thou sowest is not quickened except it die."

J. A. W.

ELM COTTAGE,
EDINBURGH, *December* 1860.

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CHAPTER I.

HOME AND FAMILY INFLUENCES.

"Household treasures! household treasures!
Are they jewels rich and rare;
Or gems of rarest workmanship;
Or gold and silver ware?
Ask the mother as she gazes
On her little ones at play:
Household treasures! household treasures!
Happy children—ye are they."

"They grew in beauty side by side;
They filled one home with glee."

In the year 1812, on the 2d of June, a new household was formed in the city of Edinburgh. The small group of friends assembled at the wedding little thought that any beyond themselves would look back on that day with interest. So it ever is: we take part in what seems an every-day occurrence, and find afterwards, that, like the prophets of old, we have been by word and act heralding wondrous things, sowing seed that shall never cease to grow and propagate itself; uttering words whose echoes shall resound throughout the eternal ages.

The bride, Janet Aitken, the youngest of a large family, was a native of Greenock, where her father lived and carried on business as land-surveyor. So fragile was Janet as a child, that it was not expected she could reach maturity, and her mother tried to prepare her for early death. But the race is not to the swift, nor the battle to the strong; and the tender mother was the first to go, leaving her desolate little girl to

the chill of an unsympathizing world, and disposed to envy every one who had a mother. Janet, at the time of her marriage, of which we now speak, had passed through years of grief and change, and only a sister and a brother remained of her family circle. Both were married, and *home* had long been to her a word of little meaning.

The bridegroom, Archibald Wilson, had, a few years before, come from Argyleshire to settle in business in Edinburgh, and thus, to each, "our own romantic town" had few personal associations. Yet at this, their wedding-time, how fresh and beautiful it looked! In the clear mornings and long evenings to watch the Firth and the distant hills peeping in and out in the varying lights; to feast the eye on the crags and battlements of the dear old castle in its nest of green, with pictures of living beauty to refresh the eye at every turn! Did it not say to their young hearts, "Forget also thine own people, and thy father's house," and in me thou shalt have a home dearer than those of the past?

The first pledge of this unspoken promise was given in the birth of a daughter in the spring of the following year. When Mary was a year old, there came a fair little brother again to open the fountains of love; and, when John was nearly two years of age, the group received a fresh addition in the arrival of a second boy, who was named Daniel, and is the only son who has survived till now.[1]

The year 1817 opened in sorrow, for it found the heavy hand of sickness on this little band; and before its first month closed, Johnny had ceased his sweet prattle, and had gone to learn the angels' songs. The first deposit of the family treasures was thus placed beyond reach of the spoiler, and since then, from time to time, the store has been added to. Like the dreamer's ladder, a pathway was formed, by which the yearning hearts left behind have paid many a visit to the happy circle above, and been refreshed by the assurance from the Saviour's lips, "I will come again and receive you unto myself."

About a year after this, on the 21st of February 1818, twin

[1] Dr. Daniel Wilson, Professor of History and English Literature, University College, Toronto, Canada.

boys were born. It seemed to the mother, that God, having seen the desolation of her heart in the dreary months gone by, had, in His compassionate love, sent not only a son to increase the little flock, but also one to take the place of his brother in heaven. So while a new name, George, was given to the elder of the two, the other received the name of John.

From the first the boys were unlike each other,—John dark, with black eyes; George fair. George was so small a baby, that tiny garments had to be made expressly for him, and for many years after they were kept as curiosities, from their miniature dimensions.

A proof of this may be worth noting. When he was five months old, a lady, walking with her husband on the street, stopped him to look at this baby in his nurse's arms. "Did you ever," she asked, "see a child of two months with so intelligent a face?" His energy and vivacity surpassed his brother's, who manifested a delicacy of constitution. George's Highland nurse declared he showed more "spirit" than any of the children, and she was very proud and fond of him in consequence. His paternal grandmother was one of the Auchinellan Campbells, of Argyleshire, and to the Highland blood Jean attributed her nursling's liveliness.

When the twins were two years old, a little brother joined them, but only to secure his heavenly inheritance. Two days were all he spent on earth. Over the next five years the shadows gathered. Two sisters and a brother were born. Of these, Jeanie died when four years old, Margaret lived three months, and Peter, the second of the name, one year.

"'My Lord hath need of these flowerets gay,'
The Reaper said and smiled;
'Dear tokens of the earth are they,
Where He was once a child.'

"And the mother gave, in tears and pain,
The flowers she most did love!
She knew she should find them all again
In the fields of light above."

What influence these sad events had on George we cannot

tell, but, undoubtedly, impressions for life were made during those years. At five he perhaps learned the first lesson of death and immortality when his baby sister slept her last sleep; and as he had attained the age of seven when the sister of four years, and the brother of one, were taken away within two months of each other, he was capable of realizing much that our Heavenly Father only teaches in those hours of darkness. In manhood and later years, he occasionally alluded to them in such a thrilling way, as made one feel that through all his life they had been present with him; but, evidently, the topic was one not to be dwelt upon. "I saw," he wrote in the last year of his life, "in early childhood or boyhood, so many little brothers and sisters die, that the darkness of those scenes, and the anguish of father and mother, made an indelible impression upon me." It was his belief that the human mind loses no impression ever made on it, and that the events of infancy, though they cannot be recalled, are not effaced, and will probably, like wonders revealed in a palimpsest, come up for review in the future life. His friends will remember many a pleasant wish for the autobiography of a baby, expressed both in public and private.[1] It may be that the distress he ever felt, on hearing of or witnessing suffering in young children, originated in those early experiences.

But though so soon reaping the benefits of a yoke borne in youth, let it not be supposed that his was a gloomy childhood. Far otherwise; his keen susceptibilities were open to joy as fully as to sorrow. His active, healthy frame, in boyish pursuits and games with his brothers, made life itself a pleasure; warm affections bound him closely to each one in the home circle; his mother's face was in his eyes the most sweet and beautiful the

[1] "I have always thought and even declared in my lectures, that the most wonderful of all books would be the Autobiography of a Baby; but since, I fear, that you will not be able to coax either Freddy or Malcolm to make your fortune by writing it, I go on to suggest that in the life that is to come, our memory of the past will go back over all our earthly reminiscences, not merely over all that *we* grown folks recall, but over all that we have forgotten, which is at present most vivid to your dear bairns. We shall mount to the origin of our individual lives, and trace to their dim beginnings our first conceptions of space and time, of our own individuality, and of other existences; of an inner consciousness and an outer universe."

earth contained; and the peculiar love of twins for each other was felt by him in all its force. To this has been attributed "something of that wonderful power of attaching himself, and being personally loved, which was one of his strongest, as it was one of his most winning powers."[1]

His mother is "regarded by all who knew her as a woman of rare natural gifts, who zealously fostered in her children the love of knowledge which they inherited."[2] "Any one who has had the privilege to know him, and to enjoy his bright and rich and beautiful mind, will not need to go far to learn where it was that her son George got all of that genius and worth and delightfulness which is transmissible. She verifies what is so often and so truly said of the mothers of remarkable men. She was his first and best *alma mater*, and in many senses his last, for her influence over him continued through life."[3]

It was a custom of his mother's to pay each night a visit to the little cot of her twin boys, and repeat over them Jacob's blessing, "The God which fed me all my life long, unto this day, the Angel that redeemed me from all evil, bless the lads!" So fascinating was this to George, that in mature years he has told a friend how he used to lie awake watching for it, pretending to be asleep that he might enjoy it to the full. In the family, this blessing seemed in consequence set apart, as it were, to the twins, and inseparably associated with them.

Realizing that education is the developing and training of every faculty of mind and body, the children were encouraged in all pursuits likely to further this. A healthy moral and religious atmosphere surrounded them; their individual tastes and powers were carefully watched and elicited, and a kindly confidence encouraged. About the age of four, each one was sent to an elementary school, and the boys afterwards to that of Mr. Knight, a teacher well known for his care in laying the solid substratum so often neglected in schools of greater pretension.

[1] 'Horæ Subsecivæ,' Second Series. Article, "Dr. George Wilson."
[2] 'North British Review' for February 1856. Article, "Colour Blindness."
[3] 'Horæ Subsecivæ,' p. 104.

On his first appearance at the annual public school examination, George recited the 'Newcastle Apothecary,' receiving at its close the encomium, "Well done, Bolus!" Hence the name we find him appropriating in the following letter, believed to be the first he penned; and in which it will be seen he already parodies an early and lasting favourite, "John Gilpin." It was written while from home, during the vacation immediately following his recitation, when he was not above seven, and is addressed, "My mother, Edinburgh."

"MY DEAR MOTHER,—We left Edinburgh on a very disagreeable day; we arrived safe and well. I take a bowl of whey porridge every morning. *Bolus* takes a drink of milk every morning and evening. You will receive six peas-bannocks on Saturday with the box. Janet Brown is going to make you a sweet-milk cheese.

"Now let us sing, long
Live the King, and
Bolus, long live he;
And when he next
Does say this piece, may
I be there to see.

—"Your affectionate son, GEORGE WILSON."

As a specimen of progress, a letter may be given of a later year, while at a farmhouse in Peeblesshire, where he saw much that excited wonder in a town-bred boy. The wide kitchen-chimney, where, sitting on the seats in its sides, he could look up and see the stars, was one of the novelties never forgotten. The letter is partly to his sister Mary, and partly to his mother. Mary, it will be remembered, was five years his senior, and was, like himself, a child of unusual promise.

"ROMANNO MAINS, *September 15th.*

"CARA MARIA,—Tua epistola venit mihi sex-dies. Vides scripsi te secundum oras. Scribam te major epistola post. Epistola abs Matre venit ad Nancy. Spero ut Mater et mea parva Soror sunt melior.—Ab tuo Frater, GEORGIUS WILSON."

"Send me two or three old pill-boxes to put the insects in.

I have got a grasshopper with a red head, but it had the misfortune to lose one of its legs, which are red also.

"GEORGE WILSON."

"DEAR MOTHER,—Little Robert is now well again, and enjoys the country very much. Grandfather is very grateful for what you sent him; tell Mary to address the letters Romanno Mains, Noblehouse, and not Peebles, as the last one was addressed.—From your little DOSY,[1] 1828."

The sister alluded to in the Latin epistle had been born two months previously. Coming as she did after the death of four, her welcome was a warm one, and children and parents looked on her as a precious gift. She and a sister two years younger still survive, and reference will occasionally be made to them. The elder one received her mother's name, Janet or Jessie, and the younger that of the dearly loved Jeanie, who had "fallen asleep" three years before.

Even at this early age, George's love for books was manifest. Jessie's nurse, in speaking of the family at that time, has often summed up his pursuits in the following words:—"Oh, as for George, he was aye to be seen in a corner, wi' a book as big's himsel';" probably a volume of the first edition of the 'Encyclopædia Britannica,' a great favourite in those days. She does acknowledge, however, that he took a daily walk with her and the baby, when telling stories and listening to them was the favourite occupation. He has often told with glee how his mother, remarking his diligent study of Brown's 'Dictionary of the Bible,' at last, after silent rejoicings, expressed to him her satisfaction at his choice. "Oh, mother," was the reply, looking up with a bright face, "I am making a list of the precious stones!"

His first attempt at rhyme gave her pleasure from the feelings that prompted it. A friend sharing a love for natural history in common with him and his brothers, had instructed them in the art of impaling live insects as specimens. It much grieved her that boys should learn cruelty so early, and

[1] A pet name, used through life in writing to his younger sisters.

she spoke earnestly to them of the sacredness of life, how easy it was to take it away, but how far beyond the power of any created being to restore it. George showed the fruit of this lesson, by coming joyously one day to tell of a butterfly he had saved from drowning in a pool of water. One life saved seemed in the child's estimation to atone in part for those taken away. On going to bed his mother found a scrap of paper under her pillow, containing in verse the butterfly's thanks to its preserver. "The tender heart which was afterwards to plead so earnestly with medical students against the cruelty of reckless vivisection, was here revealed!"[1]

More pleasantly was humanity cultivated by the encouragement of pets of all kinds. Hedgehogs reposed in undiscoverable corners in the daytime, and appeared at twilight to be fed. Tortoises made the recesses of the old-fashioned grates their bed-chambers, coming out to be regaled with grapes and dandelion leaves. In short, it was an understood fact, that no pet could come amiss to the household, so strongly did a love for animals pervade the family. One favourite, at the time we now speak of, was a large rough bull-terrier, of no great beauty. Duff had been intended to act as watch-dog, but he soon came to the conclusion that watching his master's children was the duty nearest his heart, if not his conscience, and he was skilful in evading all other demands on his talents. Jessie, when able to walk alone, liked nothing better than to go to sleep with her little arms round his soft fat neck. One day an alarm was raised that baby was missing. In vain every room was searched, till by chance some one looked underneath a table, where she lay sleeping in the favourite fashion, Duff waiting in motionless patience till it should please his little mistress to release him. By the death of a maternal aunt, four cousins were about this time left orphans, and became domesticated with the Wilsons.

1 'Macmillan's Magazine,' January 1860.

In a letter, dated Feb. 22, 1855, the following sentence occurs:—"I had the happiness, when a boy, to have a mother who sedulously encouraged her children to be naturalists, and made me when at school the passionate lover of God's works, which in maturer years I have learned still more to be."

And to Mrs. Day, St. Andrews, he says, in 1850:—"Much of my delight as a child arose out of natural history. It gives food to the imagination, and tempers the fairy books, of which too many cannot be given to children."

Their ages varied from four to twelve. Duff could not be reconciled to these strangers, and considered his responsibilities largely increased. When a game at tig or blindman's buff was in prospect, the first step necessary was to turn Duff out of the room, so strongly did he resent any of the cousins touching *his* children.

Before leaving those early days, an instance of George's good feeling may be alluded to, in which is seen the germ of the unselfish consideration for others, so manifest throughout his life. While at Mr. Knight's he was enjoined to return home immediately after school hours. As this injunction was unheeded day after day, an explanation of his conduct was at last insisted on. With great reluctance he told that a little boy, blind of one eye, was much persecuted by his school-fellows on account of his infirmity, and not permitted to join in any of their games. Sympathy with him overmastered the fear of parental displeasure, and George had remained each day to play with him, thus hoping to dispel the painful impressions made by the tyranny of the other boys.

Memoranda by his brother Daniel help to complete the picture of the juvenile life, which left its strong impress on later years. He says, "George was my junior by fully two years, an interval sufficient to constitute an important difference in boyhood, though it becomes insignificant enough in later life. Nevertheless, he and I were, from my earliest recollections, conjoined alike in our sports and boyish studies, notwithstanding that his twin-brother John survived till his eighteenth year. In truth, no two brothers were perhaps ever less alike than these twins. Those who only knew George in later life, when disease, sore suffering, and the mutilation of surgeons, had done their work on his wasted frame, could little conceive of the joyous, healthful, and vigorous boy. Throughout his whole boyhood and youth he enjoyed uninterrupted health, while John early betrayed symptoms of physical weakness, and a tendency to the pulmonary disease, which at length terminated his life. My recollections, wandering back into old boyish memories, call up dim visions of little sisters and brothers, whose cradles I rocked, and by whose sick beds I watched, as they

faded away in their early years, and the dark shadow was again and again thrown across our diminished circle. Hence, birth-days, those fond anniversaries of the home-fireside in many a happy family, were never named amongst us; but we learned to note certain seasons that brought their sad memories and silent tears to our dear mother; and mingled grave and earnest thoughts with our light-hearted mirthfulness. In later days, when the return of the 21st of February reminded George of the completion of another year, it used to bring with it strange, sad fancies, on which he would sometimes dwell, awakened by the thoughts, that the brother to whom, as to himself, it was the anniversary of life's gift, slumbered in his last long sleep among the kindred dust, where both are now laid at rest. But while such incidents as these, which marked life's early experience, helped to develop thoughtful earnestness, and to awaken tender sympathies, which bore fruit in riper years, our boyhood was a very happy one, in spite of some stern but healthful lessons of self-denial.

"Edinburgh, our native city, was the scene of all our youthful years; and that itself was no unimportant element in life's training. Among my earliest recollections are our rambles and scramblings among the rocks and declivities of the Calton Hill; which, as we grew from childhood to youth, were exchanged for the wider scope that Arthur's Seat afforded. There we knew every accessible cleft and gully of the rocks, delighted in climbing the famous Cat-nick on Salisbury Crags, and preferred finding our way down from the top of the hill, as a goat might scramble down the cliffs, to taking the more leisurely and safer slope of the grass. Then the sea, with its inexhaustible charms, lay within easy distance. Leith sands, and the pools of the Black-rocks at low water, with their crabs and whelks, and marine life of all sorts; and the delights of the shipping and building-yards, awoke all the Robinson Crusoe longings and dreams of boyhood; or a Saturday's ramble carried us to Granton, and away beyond it to old Roman Cramond, where the sculptured eagle of the legionaries of the second century, still visible on the rocks, was a source of never failing wonder to us.

"Edinburgh boys are generally great walkers, and George

was a match for any pedestrian of his years. Many a long Saturday's excursion has accordingly left pleasant memories behind, when, added to the mere physical enjoyment of a holiday walk among novel scenes, there were the fresh sources of pleasure of botanizing or geological gatherings, and the tin botanical-box became the unfailing companion of our walks. A certain amount of pleasurable sympathy in the associations with ancient scenes and picturesque ruins is also a common feeling with boys; and frequently a Saturday's ramble had for its special goal, Old Woodhouselee, Roslin Chapel, Niddry Castle, Preston Tower, or some other of the storied ruins around Edinburgh, associated with the names of Wallace, Bothwell, Queen Mary, etc. One of our boyish wonders was to watch, from Arthur's Seat, the slow progress of the railway tunnel, which at length forced its way through the solid trap rock, and admitted of Edinburgh's first railway entering the town. It is only the juniors among Edinburgh citizens who need to be told of the marvels of the Dalkeith railway. The triumphs of the steam-horse had nothing to do with it. A good, honest quadruped, fed on oats and hay—not on coke and coal,—drew the rude railway carriage at an exceedingly safe and moderate pace; and it was no uncommon occurrence, after the train had started, for a Musselburgh fishwife to hail the driver, who would put down his brakes, and pull up in response to her sturdy shouts, and wait till she leisurely disposed of her baskets, before the cars were once more in motion. Not only men, however, but even boys were less impatient in those old times than in these days of flashing telegraphs and express trains; and if the rate of progress on the old Dalkeith railway was moderate, its charges corresponded thereto. Hence it helped to extend greatly the range of our Saturday's wanderings. A few pence secured our transport, by its means, away beyond the North Esk, and so brought within our reach the old ruins of Bothwell and Crichton Castles, of Seton and Temple Churches, besides Roman camps and historical scenes, already possessing an interest for us: such as Lasswade, Prestonpans, Carberry hill, and Pinkey cleuch, all readily accessible to the healthy young pedestrians. One such holiday ramble, for instance, I vividly recall to mind, when

George was probably not more than eleven years of age. By help of the railway we had got a fair and early start, and made our way to the grand old ruin of Crichton, where

> 'That castle rises on the steep
> Of the green vale of Tyne;
> And, far beneath, where slow they creep
> From pool to eddy, dark and deep,
> Where alders moist, and willows weep,
> You hear her streams repine.'

Our purpose was to catch the railway car on our return, and so diminish the journey homeward by some seven miles; but the day was bright and the attractions manifold, and when we reached Dalkeith on our homeward way, laden with a large sigillaria which we had secured as a coveted prize, the cars were gone, and we had to make our way home as best we could. I well remember still the debate as to whether our prized sigillaria—which the alternate carrying for some miles had already proved to be no light weight—could possibly be transported home. The result was the determination not to abandon it; but many a time was the coveted burden passed from one to the other, as the lively chat and merry sallies with which George ever beguiled such a ramble grew less and less frequent, until at length after trudging over the last miles, with only a rare monosyllable, we reached home, wearied and footsore, to be refreshed with our ever-welcome cup of tea, and then to

> 'Lay our head
> Upon our own delightful bed.'

But when it is considered that we had probably walked not less than fifteen or sixteen miles, and that such were common holiday and Saturday rambles, it suffices to show the vigorous energy and robust health that characterized the happy little fellow in those early years. No pleasanter companion could have been. The lively fancy which sparkles in his writings, and the genial humour so familiar to all who knew him in later years, already marked the boy, and there grew up between us then a common bond of sympathy and lasting friendship, such as by no means invariably knits brothers together, and which years only served to strengthen and mature. As for the dear-bought and far-brought sigillaria, it was safely housed, and prized accordingly;

and occupied a prominent place in the little museum which we were already forming. The gathering of fossils, minerals, shells, insects, gall-nuts, skeleton-leaves, and miscellaneous relics of all sorts, for our collection, as well as the commencement of a herbarium, gave new interest to our holiday rambles; and a folio copy of the Journal of George Fox, the founder of Quakerism, which was converted to our use as blotter and press for the botanical specimens, suffered wofully in the service of our *hortus siccus*.

"The library at our command was, for the most part, little suited to juvenile students. The death of an uncle, the Rev. John Russell, of Muthil, and soon after of his widow, led to the addition to our family circle, in 1827, of four cousins, John, Catharine, James, and Alexander, who grew up with us thenceforth as brothers and sister. But time has wrought with them, as with our earlier fireside companions, and only one now survives, the Rev. Alexander Russell, of Adelaide, South Australia. We have both thought in later years of Mrs. Hemans' 'Graves of a Household,' as the old playmates have scattered to England, Canada, and Australia; never, alas! to gather together again. The addition of our orphan cousins to our number was accompanied by that of their father's library, an imposing collection of ponderous old folios, and little dumpy vellum-bound quartos of sound divinity, the very outsides of which had a learned, orthodox look about them. They were little likely to furnish the favourite reading of boys. Nevertheless, they were occasionally dipped into, and even the mere handling of such venerable tomes, and familiarity with their old type, quaint title-pages, or more curious colophons, were not without influence in the forming of tastes, and the impressions survived till the time when the rich stores of the University and Advocates' Libraries came to be within our reach, and even the reading-room of the British Museum was not unfamiliar to us.

"Certain books of our own smaller library, however, were greatly more influential in giving a bias to youthful tastes and studies. A copy of Goldsmith's 'Animated Nature,' in four octavo volumes, I specially remember. At a somewhat later date the 'Library of Entertaining Knowledge' opened up to us

of arms, which was duly coloured and put up prominently in the museum. The blazonry I have forgot, but the motto was this bit of juvenile Latinity: '*Iniens ætas est tempus.*' A weekly journal was also established, of which I was constituted editor; and in it were not only recorded selections from the weekly papers on Natural History, etc., but also choice extracts and pen-and-ink illustrations. I have not seen it for more than twenty years; but I believe it is still in existence. It was written in double columns on a folded half-sheet of foolscap, and I think I could recognise still certain fossils drawn in its pages; and also some amusingly crude discussions on palæography, with illustrations, executed in China ink, the materials for which were chiefly derived from the old folios and dumpy quartos already referred to in our uncle's library; for there was a good deal of antiquarianism mingled with our natural history, mechanics, astronomy, etc., and John Alexander Smith and myself, who have each since filled the office of Secretary to the Society of Antiquaries of Scotland, were already embryo numismatists, and knew a Roman denarius from a bodle as well as Edie Ochiltree himself. Our museum accordingly had its little collection of coins, penny-tokens, Chinese cash, a shilling of Edward I., and two or three dearly-prized Roman brass."

Dr. Philip Maclagan has kindly supplied the following reminiscences of his friendship with George Wilson in boyhood, in a letter addressed to his sister:—

"We entered Mr. Mackay's class together, and speedily became very intimate, from the similarity of our tastes in the matter of amusements; and I was one of the original members of the 'Juvenile Society for the Advancement of Knowledge' which met in your house, and of which your brothers were the founders. The Society met on Friday evening, papers were read by the members in rotation, and questions previously started were debated. I remember some of them—*Whether the whale or the herring afforded the more useful and profitable employment to mankind? Whether the camel was more useful to the Arab, or the reindeer to the Laplander?* and similar puzzles for youthful ingenuity. We had a museum, too, kept

in a cabinet with glass doors, which your mother kindly gave up to us, and a scientific newspaper in MS. was written by, and circulated amongst, the members. I remember that Daniel contrived and executed an allegorical heading for this paper which was much thought of; and many items of news which found a place in its columns, I can recall as if I had read it yesterday. In it, also, we recorded the results of our Saturday excursions into the country, the plants and animals noticed, with any facts as to their habits and peculiarities.

"I do not think that at this time George had any fancy for chemical research. Chemistry was becoming popularized then, long before either Botany or Zoology, but it was to these latter branches, so far as I know, that his taste for inquiry was first directed. I owe him a debt of obligation for first affording me the pleasure of reading the 'Pilgrim's Progress,' though at that period neither of us thought of anything but the story: I remember quite well the look of the copy which he lent me; a rather thin old-fashioned octavo in calf. As years wore on, I became rather an ardent collector of plants and insects, for which George did not care much, so that our paths diverged a little, and we were not so often together on Saturdays. But until we left the High School, our friendship remained unbroken, and I can testify to George having been a very general favourite."

Mr. Alexander Sprunt, of Wilmington, North Carolina, another school-fellow, speaks of contemporaneous events:—

"During the period of our High School curriculum great questions were occupying the public mind, and startling events taking place in Europe,—the final struggle of the Poles, the French three days of July, the Reform movement, etc. On all such questions George Wilson took the extreme liberal side. The subject of the immediate or gradual emancipation of the negro slaves in the colonies was keenly discussed about that time. Some of us being related to families of the colonists, were familiar with the arguments for a gradual abolition of slavery. George was an unremitting advocate of immediate emancipation."

"After we entered the High School," his brother proceeds, "our long vacation holidays were spent, on several occasions, at the manse of Cumbernauld,[1] in Dumbartonshire, where the Rev. John Watson, who had been our father's tutor in his youth, made us hospitably welcome, and introduced us to all the novelties which country life presents in so charming an aspect to the town-bred boy. The hay-making was over before our holidays arrived; but the reaping, the carting and stacking, and the harvest-home, were all within our happy holiday weeks; diversified by an occasional ramble when the minister's parochial duties called him off to visit some outlying farm or cottage, and by visits to Cumbernauld House, where Mrs. Aitken, the old housekeeper of Admiral Fleming, made us welcome, and we occasionally enjoyed the luxury of a ride through the park on a frisky little Shetland pony which was at our service —when we could catch it. It would seem, however, that in 1830, John and I alone went to Cumbernauld, and to this, accordingly, is due the earliest fragment of George's correspondence which I have preserved. Here are some of the contents of it, suggestive of many other pleasant memories: 'John mentioned in his letter that Mr. Watson had promised him a cat in place of the grey one. But I am sure you will be glad when I tell you, your old friend, Mr. Grey Cat, came back on Sabbath morning.' Then, after news of other kinds, occurs this important passage relative to some coveted treasure for the museum: 'Mother would have bought the sturgeon's head, but they asked half a guinea for it. . . . . I have had several delightful walks since we parted. The mice are lively, and get a run on the table every night. They are very impudent, and bite whoever touches them. The cat gives several side looks at them, but never dares to touch them.'

"The concluding reference here is to one great triumph achieved in the course of our Natural History pursuits. Our domestic menagerie never wanted some favourite pet, though these

[1] In the quiet little village of Cumbernauld, a sensation seems to have been produced by the appearance of the boys. John writes to his twin-brother in 1830, "All the people in the village know us, but when we go through it, we generally get a good stare, and a good many boys and girls run after us crying, 'Look, there's the braw callants.'"

were of the most varied description. We rejoiced successively in a tame owl, a sparrow-hawk, hedgehog, tortoise, guinea-pig, rabbits, etc. The hedgehog was long a favourite. It used to sleep all day coiled up by the fire; and towards dusk it began to move, and would run about, with its grunting cry; coming, when called on, for a bit of apple, or a cockroach—one of its favourite delicacies. But it chanced on one occasion that a poor, barefooted Italian boy, with his hurdy-gurdy and white mice, became an object of compassion to us; mother was readily induced to provide him with stockings and an old pair of shoes, and in gratitude for these and other services, he presented us with a pair of white mice. A cage was made, which by and by expanded into a sort of mouse-palace of two storeys, with parlour, breeding-cage, etc. A part of it was apportioned to a pair of black and white mice procured by some means or other; and as they multiplied on our hands, our great ambition was to teach a rough little Scotch terrier that we had—famous for rat-hunting,—to lie and let our tame mice run about his shaggy coat. The mice were entirely devoid of fear, but Coxy used occasionally to show his teeth in a way that did not promise very well for his discrimination between white and ordinary mice had he been left with them alone. From George's letter, however, it would seem he had been trying the same experiment with Mr. Grey Cat, and, though the case was a harder one to deal with, apparently with equal success.[1]

"Meanwhile, the museum was receiving his special care. In a letter from mother to me, of date 24th August 1830, she says, 'George has just come in from seeing Maclagan. On his way home, he saw a shop full of curiosities. If I can find time, I

[1] Letters of this date, of the brothers to each other, give amusing evidence of the deep affection entertained for the mice. In one, the following passage occurs: "There was no mention made of the mice in any of the letters, but from that, I suppose they are quite well, for if anything had been wrong with them, it would have been mentioned in every one of the letters." Parallel instances to this, of late date, might be found in George's more than once rescuing mice about to be made the subjects of experiments in his laboratory. No such things, he said, should be done there. Any talk of poisoning mice always seemed to distress him; and when such death was unavoidable for them, he endeavoured to insure that the poison used should be that most speedy in its effect.

shall pay it a visit; but you must not form any expectations, as I am not disposed to part with much money in that way.' In spite of the prudent warning, expectations were, no doubt, formed and realized also. One of these 'curiosity shops' was Mrs. Somerville's, in East Register Street; where many a gathering of pocket-money was expended on minerals and shells; the arrangement and naming of which were unfailing sources of pleasure. But the tastes and habits that were then being developed, will be better illustrated by the following letter of the same period:—

'*Tuesday, 24th August* 1830.

'DEAR DANIEL,—I was very happy to hear you had begun Botany. I forgot to mention in the letter I sent you that I got the present of Bingley's Introduction to Botany, with coloured engravings of trees, shrubs, flowers, leaves, roots, stems, and all the other component parts of flowers. From it I learn the parts of plants. On Thursday, Philip Robert Maclagan and I went out to Duddingston. We saw some beautiful dragon-flies. We went on to Craigmillar, where we saw some pretty young foals in a park. We returned home by Liberton, with our boxes filled with plants. On Friday, we set off for Corstorphine; but falling in with some empty carts at the three-mile stone, we got in, and rode past Corstorphine to a place called "Four Mile Hill" (though it was six miles from Edinburgh). Returning, we found a great many small frogs, some half-an-inch long, others less; we took them to a neighbouring ditch. They swam very nimbly.--I remain, your affectionate brother,

'GEORGE WILSON.'

"A letter of the same holiday time, addressed to his twin-brother, John, records the marvel of 'a heifer exhibiting at Calder, with two heads; one the shape of a bull's, the other of a cow's. The cow's head was liveliest, but it could eat hay with both mouths. I have read of a sheep with two heads; and, indeed, Mr. A. Maclagan saw it at Ayr.' Then follows an account of an elephant which he had missed seeing, though his cousin Catherine had been more fortunate in witnessing it perambulate the streets, on its way to Leith, to take its passage to Newcastle;

and from her, accordingly, he derived the materials for his interesting narrative. The next letter is addressed jointly to 'Messrs. D. and J. Wilson,' and tells how the latter part of the holidays had been spent by him while his brothers were enjoying themselves at the Dumbartonshire Manse.

'*Thursday, 7th September* 1830.

'DEAR BROTHERS,--I have had a delightful jaunt, since I last wrote you, to Callander, along with Catherine and Mary. We left Newhaven at half one o'clock for Stirling, in the "Stirling Castle" steamboat. We reached Stirling at about half-past seven. We stayed that night and the next day with Mr. and Mrs. M'Ewan. On Friday, we went to Callander by the coach at five o'clock, and reached it at half-past seven. We saw the Pass of Leny, Bracklin Bridge, the Trosachs, Loch Katrine, Helen's Isle, Pass of Glenfinlas, etc.; as Mary has written an account I shall not say any more about them, but when you come home you will hear all about them. We returned to Stirling on Thursday morning, where we had left Catherine till we should return, and left it for Edinburgh on Friday at half-past three. I saw Richard Alexander in Stirling. He gave me a piece of the stone in which Bruce erected his standard at the battle of Bannockburn. As I was walking out with Mr. M'Millan (when I met Alexander) we fell in with an old blind man, blind from his birth, who can tell the colour of your coat by feeling it, and he knows every verse in the Bible. If you mention a proper name that occurs in the Bible, he will tell you where it is, and repeat the verse. I brought home some sea-urchins and sea-eggs brought from Milport in the Cumbraes; one of them with spines, the other two not. On Monday a balloon went off at Leith. I went up the Calton Hill. It was crowded with people; as I could not wait, it being past the time, I came away; however, I saw it from York Place and the North Bridge. It is Mr. Green's eighty-seventh time. Mr. C. Bass, of the Caledonian Theatre, went up. It descended near Corstorphine. Mr. Bass gave an account in the theatre of his voyage, and the feelings incidental to the aëronaut. John Rutherford, the British sailor captured by the New Zealanders

and tatooed, is now in Edinburgh, selling his narrative for a penny. I saw him standing at the door. The lines are filled with charcoal.—I remain your very affectionate brother,

'GEORGE WILSON.'

"The date of this letter indicates that the holidays were drawing to a close. Within a week or so thereafter our daily sports were in the High School Yards, and our busy duties in its halls, but soon we bade farewell to the old High School, occupying the site of the ancient Monastery of Black Friars, of the Order of St. Dominic, founded by Alexander II. in 1230, and transferred to the use of the City Grammar School at the Reformation. The migration from the time-hallowed site at the head of the old High School Wynd to the splendid edifice erected on the southern slope of the Calton Hill, was an important change in other ways besides the mere removal to a more commodious and magnificent building. It put an abrupt close to a host of old school customs and traditions; and, among the rest, to the hereditary bickers and strife between 'the puppies and blackguards,' as the High School boys and the natives of the neighbouring Cowgate and its purlieus respectively designated each other. Without being at all quarrelsome, George and I did not pass through our school days, among some five or six hundred boys, and with our hereditary Cowgate foes outside the playground walls, without a battle or two; and when it fairly came to a state of things which left no honourable alternative, George was as little of a coward in that as he proved in other duties in later life. The only real fear, indeed, was that of carrying home the tell-tale traces of a bloody nose; for mother was as little disposed to look with favour on such relics of strife—however unavoidable—as good mothers usually are. Such chances, however, which were always rare, were nearly brought to a close with the grand ceremonial which transferred the school to its new domicile. On the 23d June 1829, we walked in procession, each bearing our white osier wand, with music and military guards, and all the civic glories that the Lord Provost and Magistrates could muster to do honour to the occasion. The upper rooms of the east wing in the new building were occupied

by the class under Mr. Benjamin Mackay's care; and there, and subsequently in the Rector's class-rooms, George maintained his place among the rivals of the first form; while at leap-frog, foot-and-a-half, trap-bat and ball, or other sports in the yards, or at a snow-ball bicker, or a Duddingston Loch skating-match, he was quite as ready as for the quieter pleasures of a botanical holiday ramble.

"The vacation of 1831 was long remembered by us for its holiday pleasures. In company with our father we extended our wanderings into the Highlands of Argyleshire, spent a couple of days at Strachur, on the banks of Loch Fine, in the house where he was born, and looked with wonder and delight on a well-grown rowan tree, or mountain ash, which he had planted when a boy.

"Strachur and its parental associations had a thousand charms for us. Loch and mountain filled us with delight; and in ferrying over to Inverary, and the wonders of the Duke's castle there, it was long remembered by us with pleasure, that a whale abruptly rose to the surface, so near us as to occasion our Highland boatmen no little apprehension. The following letter was written then:—

'DEAR MOTHER,—We are now safe at Cumbernauld. After arriving at Glasgow, we sailed down the Clyde on Tuesday, and saw, besides many other things, Dumbarton Castle, and at four o'clock we reached Holy Loch. When we came on shore, we went into a sociable or car, which carried us to Loch Eck. We crossed Loch Eck in a little steamboat; the engineers were young boys. After landing on the other side of Loch Eck, we walked to Strachur, where, on the road, we saw little boys with kilts, and a little pig came running to us. When we arrived at Strachur, John and I slept in the bed where father was born. I liked Strachur very much. When crossing Loch Fine we saw a whale rise and turn himself over, and we saw his back fin; the ferryman said he often saw them, and if they came near, the least motion of the oar frightened them away; he also added, that when they are frightened, they squeak like a pig. We saw many other animals: in the canal, a water-rat and hedgehog

swimming; a solan goose near Rothesay; a hare and short-tailed field-mouse. In the steamboat returning from Inverary, I met an English gentleman, Mr. Smith, and two acquaintances. One of them was very poorly, and had travelled for the last year and a half for the sake of her health; she was very kind to me, and told me the name of the plants I had at that time in my box; she also invited me to come to the place where she was staying in Glasgow, and showed me some plants. Perhaps you are not aware that yon red and white flower Daniel brought from the Calton Hill is Foxglove.

'*P.S.*—Excuse all faults and the bad writing, as my mind is too full of C——.—From your affectionate son, G. WILSON.'

"A remark in a letter addressed to me by my father, in the following year, reminds me that it was on this occasion a friendship was begun, memorable in after years to both of us. In passing through Glasgow on our return home, we visited Mr. Hugh Mackay, a generous friend of our deceased aunt, who had taken a lively interest in our orphan cousins, and so become known to us all. His two daughters were nearly of the same age as ourselves; and George—whose conversational powers, and singularly frank and engaging manners, were scarcely less remarkable as a boy than they proved to be in riper years—soon ingratiated himself thoroughly with the younger of the two daughters. Both fathers looked on, enjoying the sallies of humour, and the graver avowals of youthful confidence and kindly feeling; and the pleasant impressions then produced experienced no diminution on a subsequent visit, which Miss Margaret Mackay paid to our sister Mary. An allusion in a letter to me recalls that, even at this date, George had, with rare ambition for a boy, set before his mind's eye the goal of an Edinburgh Professor's chair, and announced purposes to be fulfilled on the accomplishment of this desire. In later years, Miss Margaret Mackay became my affianced wife, and letters from George to her, resulting from the friendly relation of the families, illustrate, in reference to those early times, the singularly attractive manner which always marked his intercourse with ladies, and the pleasure he manifested, alike in boyhood

and at a later period, in female society. The frankness of his manner, and the total absence of any shyness or awkward reserve in such intercourse, was certainly a very noticeable characteristic in a boy; for the very opposite is almost invariably manifested in those days of peg-tops, marbles, and leap-frog, whatever be the change that a few years produce.

"Great changes have meanwhile transpired. Among others not to be overlooked, our father had purchased a share in the Edinburgh Select Subscription Library—one of those admirable proprietary lending libraries with which Edinburgh is peculiarly favoured—and there we were turned loose, like colts in a rich field of clover, to revel as we pleased in the wide range of English literature. I doubt if such unrestrained literary license is conducive to accurate scholarship, in that sense on which English University men plume themselves, not altogether without reason, on their superiority; but it was invaluable for the healthful development of the innate intellectual powers of the eager youth, and for evoking whatever was original in his mind, by leaving him to follow out the bent of his tastes. A reference to the books of the library would show a singularly varied reading, embracing a very wide range for a boy; and well calculated to bring out all the individuality of his inquiring mind. It is the grave fault of some of our school and still more of our college systems of education, that a boy passes through them as if he had been put into a mould, and comes out with the mere impress of the routine system and unvarying standard of its tests, instead of having his own intellectual powers quickened into healthful development."

A striking feature of George's later life was manifested in those journeyings, namely, the power he had of gaining friends and acquiring information. One of his fellow-travellers to Glasgow, by the canal boat, gives the following account of him when eleven years old:—"George placed himself side by side with the greatest person on board (the captain) and plied him with question after question till the moment he left the boat. Before leaving, he very politely went up to the captain and mate, and thanked them heartily for their attention and infor-

mation. They both said, they had never seen such a boy. Besides the captain, he met on board a Miss Peacock, a most intelligent lady who had been in Ireland, England, etc. George did question her, and got quite in love with her, saying, 'she could speak about everything, just like his mother.' Before parting, he gave her a cordial kiss."

Ere we pass beyond early boyhood, one or two friends may be allowed to give their impressions. The following is kindly contributed by an accomplished lady, an intimate and frequent visitor, in whom interest was awakened by the unusual intelligence of several of the children :-

"I remember well the time when my dear friend Mrs. Wilson introduced me to her then numerous young family, consisting of her own six children, and four children of her deceased sister, Mrs. Russell. I, from the first, admired the perfect subordination maintained among them, and also observed that their obedience did not appear to proceed from fear but from love. Among the group, George and John, the twins, were very interesting. They did not resemble each other; George was more active, perhaps both in mind and body, but they were like in having a loving nature. I never saw them differ for a moment. They were always together, and always busy, the one assisting the other in some mutual plan of operations, each taking the part that best suited his genius. John was a dear gentle boy. I grieved much when he was taken ill, and, after severe suffering, died. Mrs. Wilson's household was, indeed, an edifying sight. All the young people were employed, attending to their respective duties; no frivolous excuse being allowed to prevent the performance of the allotted lesson. When it was duly accomplished, then the expected pleasure awaited them of joining in the conversation, with their mother, and any guest who might be present. The subjects discussed were generally such as interested and instructed their young minds, and I remember George standing, looking at his mother with his observant eye, drinking in her remarks, or modestly making an observation of his own. I always, from the first, thought him a very clever boy. He might not be constantly at the top of his class in the High

School, that proceeded more from a certain volatility or thoughtlessness, which often accompanies genius, than from ignorance of the prescribed lesson. He was always very much alive to any ludicrous incident that occurred in the class, and I remember seeing a little book, in which he had set down a number of odd remarks made by the master, and strange mistakes made by the boys. The book was embellished by pen-and-ink sketches, made, I believe, by his brother Daniel. This book of scenes in the High School was very droll. On one page there was a likeness of the master, standing in his kind of pulpit holding out a ruler; a heavy-looking boy was rehearsing his lesson from Virgil. He had made some stupid mistake in quantity, which had excited the master's ire to the utmost, and the contrast between the grand classic Latin, and the terms of disapprobation used by the master, in very undignified English, was ludicrous in the extreme. On another page, a whole day's lessons were given, with the remarks and interjections of the master and boys, and the hearty laugh of the boys occasionally at some classic wit of the master, which George greatly enjoyed. I remember also, one fine frosty winter, such as we used to have long ago, George's relating, with great glee, that the master (I cannot recall his name), to the great surprise of the class, after hurrying over the Latin lesson, said, 'Now, boys, as you have done very well, I think it would do you all good to go out for the remaining time, and have a hearty slide,' and, what George thought added much to the amusement, the master himself stood outside enjoying the scene.

"One other anecdote I recollect his telling: The mathematical master, a short-sighted man, and enthusiastically attached to the science he taught, was one day demonstrating a difficult problem, with his eyes close to his paper; the boys in the meantime were wistfully eyeing, through the half-open door, the group outside sliding and snowballing. At length, the temptation to join in the sport became too strong for them to withstand, and one after the other departed. George happened to look in at the window just as the master, having finished his demonstration, lifted his head. The description given by George of his confounded look when he saw nothing but empty

benches, was irresistibly ludicrous. At a very early age, he and his brothers were in the custom of noting down anything remarkable they observed in the heavens, or in the animal creation. I remember seeing a small book of these *notanda*, and very numerous and interesting were the topics introduced. One, I remember, was on some phenomenon observed in the sky, with conjectures as to the cause. I showed this book to a literary man, who would scarcely believe that it was the composition of mere boys. No doubt their abilities were beyond those of most youths, but they owed the cultivation of them to their mother (their father being constantly engaged in business). She directed their young minds first to God, and their duty to Him, then she steadily encouraged inquiry and investigation, first into outward objects, and, as they advanced in years, into scientific pursuits. When very young they had a museum of their own collecting, with many really beautiful specimens. I remember most particularly several beautifully prepared skeletons of small animals, such as mice, sparrows, etc. George used to visit me occasionally, when he never failed to impress any scientific visitor who might be present with his talent and eager pursuit after knowledge. Many were the predictions uttered that he would be an eminent man.

"I believe the key to Mrs. Wilson's success in the education of her family, was the love that she fostered among them, and the free discussion that she encouraged, she herself taking a part in all their pursuits, and becoming young again for their sakes."

A friend, and occasional guest of the family, Mr. Maxwell Dick, of Irvine, greatly increased the interest of the boys in mechanical pursuits, by familiarizing them with his own numerous and ingenious inventions. He was zealous on behalf of their Society, kindly contributing from time to time to its stores, and in various ways so winning their regard, that a vigorous correspondence was kept up with him. Of this a specimen is given. Mr. Dick in after days has often spoken with enthusiasm of the extraordinary character of George, whose individuality stood out clearly even then. The special subject of interest to him seemed to Mr. Dick to be Comparative Anatomy, for

every spare hour, and the Saturdays, he devoted to searching for bones of every kind of animal, all of which he brought home, and had carefully cleaned and classified. One day he brought the entire skeleton of an infant, which he had got from some surgeon. He was determined to be a doctor; but considering that in a large city the study and profession of a single organ was as much as one man could undertake, his aim was to restrict himself to the study of the eye or the ear. That of the eye had special charms. These facts Mr. Dick vividly recalls as connected with his visits to Edinburgh. The letter is not dated, but it is probably of 1830.

"DEAR SIR,—Since we parted, I have been very busy with French, Greek, and Latin, but the vacation has freed me from these. The Society has been recommenced, and we have very warm debates on various subjects. Daniel still conducts the Journal, which has had its pages filled with original communications on various subjects. A communication of any kind would greatly enrich the Journal. If you would send us an account of the power you had saved in a threshing-mill. The ground[1] railway between Edinburgh and Dalkeith is now completed, and coal is sold from the depot. I visited it a few weeks ago. The carts are drawn by horses all the road, except a space something more than a mile up an inclined plane through the tunnel, up which they are dragged by a fixed steam-engine. The piston puts in motion two drum cylinders, on which the ropes are coiled. The ropes rest on large cast-iron wheels or pulleys. The tunnel is about three-quarters of a mile in length. There is another large steamboat, called the 'Royal William' (in honour of our king), of 200 horse-power, going between Leith and London. There is a curious property relative to inclined planes, *i.e.*, of bodies which of their own accord ascend inclined planes, and, contrary to the laws of gravitation, will not descend, but, though forced down, will ascend, and remain at the top. The figure of this body is two equal cones, joined

[1] Mr. Dick was at this time zealously occupied with an ingenious invention of his own, a system of *suspension* railways, which he had patented, and of which his young friends were zealous partisans. Hence the term "*ground* railway."

at their bases. If this is laid on an inclined plane (not solid, but such as a pair of compasses), narrow at the foot, and growing as it ascends, it will ascend and remain at the top. This is, however, really descending; a thing which might perhaps be of use for waggons ascending inclined planes. Another plan is to put a piece of lead in one side of a cylinder or ball: this will roll up a slight inclination, till the lead comes round again, and is level with the plane. Mr. Thiodon (of the Theatre of Arts) lately advertised that in addition to the usual performance, he would exhibit tricks mechanical and mathematical. They were mere tricks of deception; but at the end he showed us a small gilt lion of wood, similar to the one you told us of. The head was cut off and sprang on again. One gentleman cried it was magnetism, but the steel knife with which it was cut refuted that. Another agreed with you it was a spring, but Mr. Thiodon explained it to be a wheel on a pivot, which turned away, and allowed the knife to pass through. Since writing this, I received your kind letter and presents. I cannot express too much gratitude for your present to the museum, but more especially for your kind present of an eye-glass, which aids my bad sight very much. You have apologized for not writing oftener and before; but I ought rather than you to apologize for my procrastinating negligence, which I must promise to rectify by a steady correspondence with you. There is a large menagerie and museum come to town, containing both live and dead animals, quadrupeds, birds, insects, shells, fossils, and curiosities from all quarters of the globe. . . . Father and mother send with me their love to you.—Yours most respectfully, GEORGE WILSON."

"*P.S.*—I find I have written on the wrong page. Excuse this blunder, and the very bad writing."

It is needless to dwell longer on this busy, happy boyhood. Various juvenile literary efforts in prose and verse remain to attest the diligence of his habits and the wide range of his sympathies. But enough has been said to testify to the abounding life and energy of both body and mind. The little rill,

bright and sparkling, which we have seen emerge threadlike from its source, and gleefully pursue its way through sunshine and shade, has now widened its banks, and we begin to realize that one day it may bear on its bosom the hopes and fears of thousands, ere it pass into the boundless ocean, and be lost to view in its expanse.

In autumn 1832, he quitted the High School with a fair share of prizes. Languages never proved his favourite study, and he did not devote himself to them with the hearty zeal which marked him in his earliest scientific acquirements. While occasionally at the head of a class of one hundred and fifty boys, he never passed below the first five, and enjoyed the ease and freedom from care unattainable by the always envied dux.

CHAPTER II.

YOUTH AND STUDENT LIFE.

"Shades of the prison-house begin to close
Upon the growing boy,
But he beholds the light, and whence it flows,
He sees it in his joy;
The youth, who daily farther from the east
Must travel, still is nature's priest,
And by the vision splendid
Is on his way attended;
At length the man perceives it die away,
And fade into the light of common day."

THE holidays after release from school were spent at the manse of Cumbernauld, where, with his twin-brother, George enjoyed some happy weeks. George, however, seems to have been a little impatient to enter upon the duties of his profession. Having no fortune to give their children, his parents thought it only fair that the toils before them should be lightened by willing hearts ready to brave any storms, if only the desired haven might at last be reached. The choice of a profession was, therefore, left very much to themselves, and that of a physician had been George's selection. Whether even then he contemplated engaging in practice is very doubtful, but the curriculum of study it insured seemed attainable in no other way. On September 1st, 1832, he added the following boyish postscript to a letter of John's to the household at home :—

"DEAR DANIEL,— . . . When I first came to Mr. Watson's the windows were covered with flies, and for several days I caught the largest, and away with them through the house to give them to the white mice, but soon I learned my mistake; and recollect, the next letter must tell about the health of all at

home, and the white and black mice. I am glad at the subject of your P.S. Perpetual Motion was too delightful an idea for even Mr. Dick to put an end to. I have got a new way of applying steam to the piston, and to raise a steam balloon. I hope next letter may contain something about the Infirmary. Is there any mention of when we are to return? We have been here a fortnight. Ask Mary to write a few lines in Greek, Latin, or French, but not make the Latin too difficult. You did quite right about Samuel Brown. Kind love to all.—Your affectionate brother, GEORGE."

The reference to the Infirmary was in consequence of a medical friend, Dr. M'Culloch, House-Surgeon to the Hospital, having recommended as the best training for the boy, an apprenticeship in the Laboratory of the Royal Infirmary. This well-meant but injudicious counsel was followed, and in a few weeks more George was bound for four years, as apprentice. His friend Dr. M'Culloch died almost immediately after, and the drudgery of each day, so far from being lessened by pleasant companionship, brought him in contact with evil and profanity altogether new and hateful to him. Looking back on this period of his life, he says, in his opening address as President of the Society of Arts in 1857, "How a youth is taught is as momentous a matter for him and for the world as what he is taught. It has been most justly declared by a grateful man that the daily society of a good and noble woman is in itself an education: such also, in its degree, is the society of a good and noble man; and the fellowship of the base and foolish is the heaviest curse which can fall upon the young. All our skill is acquired by imitation and practice, so that instinctive mimicry and unconscious habit make us in manners and acts what we are. It is no small matter, then, side by side with whom the boy-apprentice works. Ah me! When I recall some of the enforced companions of my apprentice days, I feel that I would make the greatest sacrifices rather than permit a youth dear to me to encounter similar temptations." His first impressions of the new scenes presented daily to his view, are graphically described in an Address he gave to students in 1855. The portion we extract may justly be reckoned autobiographical.

"When the young student first visits the hospital, his faith in

God as the wise and merciful designer of man's body, must, in sympathizing natures, undergo a painful shock.

"He goes round the wards, we will suppose, with an intelligent senior, who describes to him the more important cases. There is one patient propped up with pillows, and panting for breath; he has not lain down for weeks, and the dread of suffocation which looks out from his strangely anxious and imploring eye, compels him to snatch what repose he can in his uneasy posture. He has, as the senior explains, 'disease of the heart;' certain of its valves are not fulfilling the purpose they were designed to fulfil, and hence his sufferings, which death only will terminate.

"Here is a second, trembling lest you touch his bed-clothes, and quivering from time to time with scarcely endurable agony. He has disease of the knee-joint, and the senior whispers, will have his leg taken off to-morrow. And so that articulation on which the professor of Anatomy expatiated in special lectures, as abounding in the most skilful arrangements for combining strength, flexibility, and rapidity of easy motion, has suffered such destruction, that it is not only useless, but so injurious, by neutralizing or deranging all the otherwise healthful, life-sustaining arrangements of the body, that it must be removed, however harsh and perilous the process be.

"Here is a third, haggard and wan, beseeching the doctor for more laudanum, as he has no rest night or day. He has cancer of the stomach, and will linger long before death release him from his sufferings.

"Here is a fourth, a virtuous and once a beautiful woman, but *lupus* has eaten away half her face, and the disease is still spreading.

"We will look at but one case more. It is a relief to the student to turn to it, for the patient has a bright eye, and says with a smile, though his breath catches a little, 'that he is better, and feels he needs only the air of his native hills, to which he is presently going, to make him all well again.' He is far gone in Consumption, and has not many days to live. . . . .

"The facts I have mentioned are unquestionably startling and sad. They drive some altogether from medicine as a profession;

they tempt such as prosecute its practice to abandon it. Fortunately for those who continue in its ranks, the first painful impression which the spectacle of great suffering occasions, becomes, like other first impressions, deadened by repetition. Other impressions, also, come in to lessen their effect. The selfish and unreasonable complaints which sufferers too often make, produce a diversion in favour of the spectator's feelings. Among the daily incidents of even the saddest sick ward, amusing events occur to lighten the tragic darkness which otherwise prevails. The convalescents are ready to cheer and assist the distressed. The medical attendant has the unspeakable comfort of knowing, that however mysterious may be the origin of the anguish around him, he can generally do something to lessen it, and often can entirely remove it. And the patient is not seldom ready to declare, that the moral gain to him from his sufferings has been such, that he counts them a small price to have paid for such a reward.

"The first surgical operation which I saw performed in the Edinburgh Infirmary, soon after becoming an apprentice there, was the amputation of a sailor's leg above the knee. The spectacle, for which I was quite unprepared, sufficiently horrified a boy fresh from school, especially as the patient underwent the operation without the assistance of anæsthetics, which were not introduced into surgical practice till many years later. Some days after the operation, when the horror of the first shock had passed away, I resolved to visit the poor fellow, who happened to be a namesake, and see if I could render him any little service. I went, however, with no little hesitation, expecting to find him in the same state of suffering and prostration as I had seen him in before, and fearing that I should only distress myself, without doing him any good. I was agreeably surprised, however, and indeed amused, to find the invalid half propped up in bed, and intently occupied with a blacking-brush, borrowed from the nurse, polishing the single shoe which in six weeks, or a month at soonest, he might hope to wear. I could not help smiling in his face, and wishing him a speedy return to his shoe, which at once became the text of a cheerful conversation. The ludicrous inappropriateness, as it then seemed

to me, of the patient's occupation relieved my feelings; and its perfect appropriateness, as it seemed to himself, relieved his; for, as I learned more fully in subsequent conversations, his great concern was to count the hours till he should reach a fishing village in the South of England, where his mother and sister longed for his return. He made an excellent recovery, and reached his home in safety. After this experience I became a constant visitor on my own account to all the wards, and in the course of four years made many a strange acquaintance. I refer here to the circumstance, that it may become the ground of recommendation to the young student, who is distressed by the spectacle of suffering, to interest himself in the welfare of the sufferers. A feeling which may otherwise readily grow morbid, is turned into a wholesome and profitable moral exercise. The text sculptured on the front of the Edinburgh Infirmary, 'I was sick, and ye visited me,' has a blessing in it for the visitors as well as the visited, as our Saviour emphatically teaches, and as all who have obeyed its implicit command have realized."[1]

This Wilson, the sailor, became the object of many kind attentions from his young namesake. For some time sailor-friends visited him, bringing tobacco wherewith to while away the weary hours. When they left for another port, George so fully sympathized with the sailor without tobacco, coffee, or friends, that money given to purchase a much coveted copy of Coleridge's 'Aids to Reflection,' was cheerfully sacrificed to supply lacking comforts. Nor were books, newspapers, or delicacies forgotten in the frequent visits, till the time of release drew nigh. Then it transpired that so far from possessing the means to reach home, his very clothes were detained for arrears of lodging. This difficulty was speedily surmounted by a subscription raised by George, and with the aid of the Strangers' Friend Society, and private help, thirty shillings and a free passage to London were obtained. To crown all, as it happened that the vessel did not sail till the day beyond that of his exit

[1] 'On the Character of God, as inferred from the Study of Human Anatomy.' Addresses to Medical Students, by request of the Medical Missionary Society in 1855-56, pp. 43-49. A. & C. Black, Edinburgh.

from the hospital, he was brought home triumphantly as a guest for the night, and next day left with the good wishes of the household. In token of gratitude came a letter from the sailor's sister, in Christ Church, Isle of Wight, addressing the boy in jacket as "Honoured Sir," much to his amusement. A beautiful letter it was. The wanderer had been followed everywhere by the prayers of his mother and sister, and now he was restored to them in peace and safety.

Like trees which yield an acrid poison when slightly pierced, but contain for those who penetrate to their core a sweet and refreshing juice, so must suffering be met without shrinking, and its inner chambers entered for the relief of the sufferer, if we are to obtain the blessing of the merciful, as did this "Honoured Sir," by the instincts of a kindly heart and healthy moral nature. The shock, however, of his first experience of the operating theatre was sufficient to make him shrink from a speedy repetition of such scenes. In a joint family epistle of October 20th, 1832, Daniel says:—"Two other operations have been performed at the Infirmary, but George did not see either;" while Mary remarks, "sometimes when George comes in and tells me that he has been preparing 12lbs. senna, etc., I ask him if he never feels sick. On the contrary, he says 'he is hungrier than before.'" Thus did the brave little heart bear its first hand-to-hand fight with the foes of this sin-cursed world.

His kindness to the sailor may be taken as a specimen of the liberality that constantly emptied his own purse and lightened those of his friends. An outer coat with large pockets caused much amusement to all who knew the varied nature of its contents from day to day, while it made them wonder little that the nurses, with whom he was a favourite, declared "they never saw sic a laddie." His brother Daniel recalls an incident of those days thus: "I specially remember one poor Pole, Iankoski, an old lancer of Napoleon's Russian Legion, who could not speak a word of English. George cheered his slow convalescence by talking to him in French; and at length, when the gaunt fever-stricken patient was sufficiently recovered to move about a little, the delightful news was brought to him that a Polish countryman lay in one of the beds of a neighbouring

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ciently manifest in George's later public career, whatever such Societies may have contributed to it. I find the following among the questions discussed at this period: The relative advantages of public and private education; The claims of the West-India planters to compensation on the emancipation of the slaves; The morality of duelling; The right and duty of resistance to tyrants, as exemplified by the Scottish Covenanters of the seventeenth century; The right of the American colonists to renounce their allegiance; The moral influence of the Drama; and last, but not least, 'Is the married or the single life the happier?' on which George, with characteristic chivalry, stood up for the married life, and carried the majority of youthful bachelors along with him."

The autumn of 1833 brought a few weeks of relaxation; and a letter to his mother, of September 10th, says: "Our voyage and land travels have been very fortunate, and this is more to be wondered at from the ominous circumstance of two hares crossing our path! I have derived great pleasure and profit from my jaunt. Our voyage up the Forth was very agreeable; it was not new to me, but I enjoyed it very much. It was a fine day, and, consistently with my profession, although those around me were getting squeamish, I was quite free from nausea, and able to prescribe." The *voyage* was only to Stirling after all, followed by a visit to Muthil, and home by Dundee.

In November he entered Professor Hope's class for chemistry, and two anatomical classes, Professor Monro's within the University, and Mr. Lizars' without its walls. This was a busy winter, but doubtless a happy one. The interest previously felt in anatomy was deepened, while chemistry began to unfold her wonders to his admiring contemplatiou. According to the laws that regulate the restless nature of boys, George had not failed to prosecute juvenile researches in chemistry and physical science while at the High School. One experiment is borne in mind where the object aimed at was to produce an earthquake. For this purpose a paste was made of steel-filings, sulphur, and other forgotten ingredients, and this was buried in a box of earth. The earthquake, however, was disobliging, and slept quietly in its box, much to the disappointment of the

[illegible] Having attended a course of lectures on [illegible] at the School of Arts, to his intense delight, he was in [illegible] prepared to enter on the systematic study [illegible] with eyes that had power to see, as [illegible] 'Life of Edward Forbes,' after depicting [illegible] by the passing of the Anatomy Bill [illegible] increased facilities to the study of that [illegible] to speak of chemistry and its profes- [illegible] not less than anatomy, though [illegible] during Edward Forbes's novitiate in [illegible]. A partner of the mantle of Joseph [illegible] the preceding century, on Charles [illegible] a worthy prophet. In his hands [illegible] had become the most famous [illegible] it had been unsurpassed [illegible] century in Europe. It owed [illegible] and skill with which the Pro- [illegible] lectures by an ample exhibi- [illegible] successfully-executed experiments. [illegible] native eloquence or genius of [illegible] native skill of Wollaston, or of [illegible]. His elocution was slow and [illegible]; but he was an admir- [illegible] public experimenter. Had [illegible] been greater, he had capacity [illegible] distinguished as a discoverer. [illegible] and the wealth which [illegible], and he fairly earned and [illegible] of public prelections [illegible]. But no one before him, [illegible] a series of strictly [illegible] weekly over nearly [illegible] experiments. To [illegible] popularized [illegible] needless blaz- [illegible] lights. A [illegible] but he would [illegible] display, and have

smiled at the serious gravity with which the Professor poured an acid on a lump of chalk, and solemnly expounded why the latter effervesced. He was little loved but greatly respected by the students; who complained of his chilling, unsympathizing manner, but at the same time acknowledged their obligations to him as a teacher.

"Like all other good teachers of a rapidly advancing science, he unavoidably, and to a great extent unintentionally, made his pupils eager for more than even he could give them."

The reader is referred to the remainder of the chapter from which this quotation is made, for a graphic account of the advancement of chemistry and the sister sciences during a quarter of a century.[1] The period of which it treats, from 1830 to 1855, has a peculiar personal interest, as well for the subject of this Memoir as for Edward Forbes, bridging over, as it does, the time from their entrance into the University as students, to that of their return as teachers within its walls.

His brother, Dr. Daniel Wilson, recalls that in 1834, "when George was sixteen years of age, the British Association held its first meeting in Edinburgh, and was an object of great interest to him, giving shape and consistency to many vague longings after scientific occupation and successes in what so soon became the favourite pursuits of his life. An ingenious mechanical inventor, Mr. Maxwell Dick of Irvine, who had invented and exhibited in Edinburgh, some two years before, his 'Suspension Railway,' was now our father's guest, and a member of the Association. He had some subjects he wished to lay before one of the Sections; and so, through his intervention, we were both able to obtain access to chemical and other Sections, and still more to enjoy the invaluable treat of admission to the great evening meeting in the Assembly Rooms, at which Dr. Buckland delivered one of his fascinating and piquant popularizations of geological science. I well remember the delight with which we both returned from listening to the humorous and attractive lecture, and seeing for ourselves, amid the gaily dressed evening Assembly, some of the scientific and literary notabilities already becoming objects of the liveliest interest. George

[1] See 'Life of Edward Forbes,' chap. iv.

embryo philosophers. Having attended a course of lectures on chemistry in the School of Arts, to his intense delight, he was in some slight measure prepared to enter on the systematic study of this favourite science with eyes that had power to see, as Carlyle says. In his 'Life of Edward Forbes,' after depicting the great change wrought by the passing of the Anatomy Bill in 1832, giving greatly increased facilities to the study of that science, he goes on thus to speak of chemistry and its professors at that time: "Chemistry, not less than anatomy, though for other reasons, was also during Edward Forbes's novitiate in the throes of a great change. A corner of the mantle of Joseph Black had fallen, late in the preceding century, on Charles Hope, a lesser but still a considerable prophet. In his hands the Edinburgh Chair of Chemistry had become the most famous in Great Britain; and, except in Paris, it had been unsurpassed in one particular for a quarter of a century in Europe. It owed this pre-eminence to the grace and skill with which the Professor illustrated his daily winter lectures by an ample exhibition of happily-devised and dexterously-executed experiments. Dr. Hope had nothing of the fascinative eloquence or genius of Davy, or of the inventive manipulative skill of Wollaston, or of the penetrating insight of Dalton. His elocution was slow and pompous; his manner cold and ungenial; but he was an admirable expositor, and a most successful public experimenter. Had his love of science or his ambition been greater, he had capacity sufficient to have made himself distinguished as a discoverer. But he was satisfied with the reputation and the wealth which his University lectures brought him, and he fairly earned and deserved both. Experimental illustration of public prelections was not a novelty of his introducing. But no one before him, in this country at least, had ventured to give a series of strictly scientific lectures, extending for five days weekly over nearly six months, and each illustrated to the full by experiments. To his honour be it said, he simplified and legitimately popularized chemistry without vulgarizing it. There were no needless blazings of phosphorus, or showy exhibitions of blue lights. A conjuror might have envied his dexterity of hand, but he would have despised the total absence of theatrical display, and have

me from nine to two or three in the morning to study the subjects of lecture. With anatomy, surgery, and materia medica, I find my time fully taken up through the whole week. They are glorious studies: the first I have long admired; the two latter are almost wholly new to me; not that I have not been more or less for the last two years of my life occupied in the minor duties of both, but I never conceived that the laws of either were so curious and interesting. I find my mental faculties most agreeably and usefully employed in the study and observation of the singular phenomena of both. Forgive me, if, in the above lines, I appear to be too egotistical, but I believe that in corresponding with an intimate friend it can scarcely be avoided; and an account of your own feelings, and pursuits, or productions, will be far more interesting to me than the most detailed accounts of all that takes place at the Broomielaw. But I have no fear of being troubled with news of the latter description; and no professional duties will prevent me from enjoying and answering your letters, for though my time is well employed during most part of the week, yet I have Saturday evening to myself, and therefore no excuse for neglecting you.

"On the last Saturday of November, the College was officially opened by the Right Reverend Principal, a practice always followed in the English Universities, and which would have been adopted in the Scotch metropolitan University also, had there been a room large enough to contain the whole number of students. The students assembled in the hall of the library, and listened to a wonderfully erudite discourse from his reverence. I quote to you a passage from it, not pledging myself that the words I employ were those used by the Principal, but that the sentiments are faithfully preserved.

"'Young gentlemen, there is one practice which I feel it is my duty to check—a practice which is very improper in itself, and which I am convinced you only practise because too little attention is paid to it in preparatory schools: it is that of making *balls of snow*.' The students had all been listening with deep attention to the sage admonitory preface; but when, instead of animadverting on any flagitious practice, or blaming swearing, etc., the Principal's only intention was found to be to correct the

heinous offence of making 'balls of snow,' the effect was instantaneous, and for two or three minutes the laughter and ruffing that succeeded drowned the conclusion of the dire anathema."

"EDINBURGH, 30*th January* 1835.

"I daresay by this time you are beginning to think I have quite forgotten you, or had too much of your company lately to care about writing you speedily. It is want of time alone that has prevented me this week; the lectures have been on particularly difficult subjects, their study has been more so, and I have been kept later at the Infirmary too. This may account for this week's dilatoriness; and for my remissness in the last week, let me tell you I fairly intended to write you last Friday or Saturday, when a train of circumstances occurred to prevent me fulfilling my intentions. I was sitting on Friday in my studio, my brother had just gone to bed (it was about one o'clock), and, thinking what I should say to you, I had shut my medical books, and was looking over a volume of Wordsworth, when my cousin came to tell me that the Register Office was on fire. I soon reached a room commanding a view of this house, which appeared in full relief against the bright and lurid sky. I roused my brother, and 'in slippers' we departed to ascertain the truth of the report. It was not the Register Office, but the New Buildings, North Bridge. It was a glorious scene; but the cold weather forced us home again for more substantial clothing, and we returned prepared for passing the night on the crowded street. I had never seen a large fire before, and I gazed on the sublime and awful scene with feelings I never experienced before. My first feelings were those of great mental agitation. I quivered like an aspen leaf, nor could I raise the glass to my eye. These feelings were wholly involuntary. It was not fear. I was determined to wait the whole night if the fire continued, and ready to run almost any risk to see its progress and conclusion. These feelings gradually lessened, and were succeeded by sensations of intense horror for fire; every other accident we are liable to shrank in my estimation, and a vivid picture of all the horrible attendants on this dreadful and devastating element passed in quick succession before

my anxious mind; nay, so intense were my feelings, that I wondered the very fear of such a disaster did not prevent the duties of life being performed. These painful feelings passed away, and were succeeded by a powerful excitement; my eye passed from the horrors of the fire to the strenuous exertions of the firemen, and I felt I could have rushed at one of the ladders, and stood among the ruins of the burning mass. It is with no feelings of egotism I narrate those feelings. I believe, to you the actions of the mind under extraordinary circumstances will be interesting, and for that reason solely do I trouble you with my feelings on this occasion.

"It was a glorious spectacle; the whole tenement of three houses, from the highest flat to the lowest, was enveloped in flames; from every window, sheets, or rather waves, billows of flame were whirling, throwing a vivid light on all the surrounding buildings, and from the combustible nature of the goods, the fire burned furiously; in less than half an hour everything but the bare stones had disappeared from the inner walls. The firemen acted most fearlessly, and with great presence of mind. Three of them posted themselves on the stone ledge over the window of the adjoining shop, and within a very few feet of the flames, directed the water on the most necessary points. One of them got up on the top of the house, and stood giving signals to his comrades; his stout, stalwart figure, his crested helmet, and his short jacket, made him look like some old Roman gazing on his favourite city amidst flames and desolation. Long ere the fire had perceptibly receded, those bold men were on the ledge of the blazing windows, and breathing an atmosphere at a great distance disagreeable, and confronting a heat as powerful as that of a furnace, directed the jets on the most needful points. I saw three of them stand in the midst of the burning mass, their red helmets conspicuous above the redness of the flames, and the brass on their fronts flashing above all, as if they, the privileged children of fire, were permitted to stand unscathed, with the fearful flames rolling around them. It was horrible to look on them, and the sight was more horrible when, with a crash, they were precipitated through the floors to the lowest apartments. Poor fellows! they were all more or less severely burnt or in-

jured; one, after enduring great pain, died next day in the infirmary; the other is slowly recovering; the third was removed to his own house, where he lies at present suffering under his injuries. The fire became much less at about half-past two, and at three o'clock, as all the burning was within, and all effect gone, we returned home, but not to sleep for some hours. The following day the houses appeared as if they had been some of the old ruined mansions of Pompeii, that had stood for seventeen centuries the ravages of time and decay, and their tottering condition rendered their immediate demolition necessary. Excuse this hurried letter; my mind was too full of the subject to permit me writing otherwise. I have now disburdened myself, and you see you a calmer, more peaceable letter next time; till which, believe me your most affectionate friend.

"GEORGE WILSON."

"EDINBURGH, 6th *February* 1835.

"Hoping with parental solicitude that the last offspring of my pen has safely reached, and found you in your usual health and spirits, and unwilling to trouble you by post, unless when peculiar circumstances interfere, and anxious to unburden my heart to my dearest friend, I take the opportunity of my cousin's return to Glasgow, and sit down to pen you a few lines, at least showing you are not forgotten. Forgotten, no! I have lost all the friends of my younger days except you, and have no heart or opportunity to make new ones; but no one has many real friends, and I have plenty in you and my own nearest relations. I have got on since you left me in the old way; the reality of life through the day, and its pleasure and comforts at night. I am not well at all at present, however. Bilious you can sympathize—no distinct illness, but melancholy and sad, and a mournful despondency so affectingly described by Byron, on waking in the middle of the night, a feeling I am a stranger to generally, for I love to lie awake in darkness—all the worse feelings of my heart leave me then, and in calmness and quietness I ponder over happy ideas and fond associations. 'Tis a strange thing (I am superstitious you will say), that for years I have always been unhappy in February;

not during the whole month, but only a portion of it. Now February is the month in which I was born. I can look back to my schoolboy days, and recollect perfectly those times as being miserable from coincident saddening events, generally those causing remorse for improper conduct. An awakened conscience is a fearful depressor of happiness. Now you will say, perhaps, that the circumstance of the time being about my birthday, that was an epoch, or an 'Olympiad,' to which the mind would retrospectively look, and the attendant circumstances of which would be more deeply impressed on my mind. I have endeavoured to account for it in this manner, but cannot satisfy myself that that will suffice to explain the facts, for I never paid any attention to my birthday; indeed, I never knew it, or if I did once hear it, certainly forgot it; nor did I look forward to next February as a time when I should be sad. It was long after several birthdays had rolled over me that the circumstance attracted my attention. Last February was the most sad and melancholy period of my life, and I can look back on many mournful birthdays. Perhaps I shall die in this month, but that will sadden *me* least, for I will have no recurrence of mournful seasons to vex me, and if I only understood religion, my wish for death I am sure would increase. I don't think I will live long; my mind will, must, work itself out, and the body will soon follow it. But God has ordained all for the best, and I do not repine, and I have great reason to be thankful that though in minor points of everyday duties, I am very undecided and many strange fancies pass through my brain, infidelity has *not*, and I have never been undecided about religion. I have troubled you with enough of my sorrows, and I am always the happier of losing them, but I shall keep a diary, or rather write my past life. It will be interesting to watch metaphysically the changes brought about in my own mind, though the causes are far less apparent than the effects. I have done; as my last letter was from my heart, so is this; but recollect the circumstances attending its production, and perhaps you will forget its strangeness.

"Nor, my dear William, imagine that I am not happy generally. I am sincerely happy, for instance, in reading your kind

letters; happy in writing to you. I enjoy reading and the company of those I love; and when night and quietness come, I am almost always perfectly happy. It is only at particular times I become unhappy, and at present I cannot write you a more cheerful letter, but I shall take plenty of exercise, etc., and recover my usual health, and you shall receive a more gay and merry epistle than this present one. The very thought invigorates me, and the strength of my mind will return with returning health.

"I may take this opportunity of telling you that the Rev. Mr. Alexander, of College Church, was ordained yesterday. Dr. Wardlaw, of Glasgow, presided, and preached on Sabbath evening; I intend to hear him. And mentioning ministers reminds me of a plan I propose pursuing with reference to Sabbath-evening discourses, viz., to take notes of the more striking passages, and send them to you, hoping to be repaid in the same coin. I believe you are in the habit of taking notes; I mean to suggest favouring me with the beautiful ideas you may hear from the pulpit. I propose principally to attend Mr. Alexander and Mr. Anderson, and trust my labour will obtain for us something worth having. In addition, you will confer a great favour on me by recommending to my notice those books you find instructive, etc. It is near two o'clock A.M., so I conclude.—Yours most affectionately, G. W."

"*February* 28, 1835.

"Really, what with Infirmary classes, and preparation for them, I have had little time left me for perusing works of general literature; and I have only been twice at church, and neither of the sermons contained much very interesting. However, I don't lose time, and contrive to get some moments for reading interesting books, not strictly medical. At present I have got hold of one that has interested me exceedingly, and which, if you have not read, I would recommend to your perusal, viz., 'The Confessions of an English Opium Eater!' a very singular book, written by a most talented, unfortunate philosopher, containing a narrative of circumstances of rare occurrence, and full of descriptions of mental emotions, interesting to all

who love the study of metaphysics. I have never studied metaphysics; I suppose my hatred of mathematics will be no help in study. But at any rate I love to mark the workings of the human mind under various circumstances; but though it is a favourite pursuit of mine to watch the feelings and actions of others, and mark the workings of the mind within, yet it is difficult to ascertain the actions and impulses to such in others, and though much may be observed, yet of course the mind of the observer is the great field of observation. To no breast but his own has he always access; no bosom but his own is laid open to him with all its joys and sorrows, hopes and fears, and their causes and effects. But this book is an exception. This talented writer has laid before his reader a narrative of a singular life, and depicted in most beautiful and poetical terms, the pleasures and pains of opium; and as the first are of a most delightful description, the latter are of a most horrid (description). There is one singular thing he takes notice of, the peculiar state of the eye (or rather the mental eye) in children. I don't know if ever in your younger days you used to shut your eyes, and laying your head on the pillow, conjure up phantoms. It used to be a favourite employment of my brother and me, and the phantoms were of a pleasing description generally, but often commonplace. Thus, I recollect seeing a regiment of soldiers pass before me by shutting my eyes in bed, and as soon as they were opened all had disappeared, to reappear on closing the eyes. This mode of producing images, I was very fond of; and even in the course of the day it would take place by producing artificial darkness. This singular faculty (which I believe many children possess), totally left me as life advanced, so gradually, that I had almost forgot I ever possessed it, till seeing the fact noticed in the Opium-Eater, in whom this faculty was awakened to a most insufferable degree. I can yet occasionally produce a phantom, but generally the only thing I observe on closing my eyes, is a spot as of bright light.

"Now my reason for asking you if you ever experienced this, is twofold; in the first place, I never recollect noticing it to you, and wonder if it is new to you; and secondly, it seems to me a singular proof of how poetical an infancy many children

pass. In fact, the appearance of a child sleeping, the lovely smiles on the lips, show the presence of happy dreams: and, oh! what can be the subject of the dreams of an infant a few days old? They cannot be dreams like ours, for all ours are tinctured by surrounding circumstances, which have affected us, or are mere versions of commonplace occurrences, rendered ludicrous (when thought over), by those anomalies that take place in dreams only; or they are horrible imaginings of fearful circumstances, or dreaded events, aggravated to so intense a degree as to make awaking from them positive pleasure. But the visions of infants cannot be tinctured by surrounding objects, or be the exaggerated depictings of every-day occurrences, and the smiles show they must be beautiful, supremely beautiful. Oh! what can be their subject, what their cause, or what delightful emotions do they feel, ere they seemingly have associated with aught that could afford subject for thought, or have obtained the power of thinking at all? But thought is not necessary for dreams, except those of association, and this is proved by the fact of the lower animals dreaming—the dog, the elephant, and, I believe, some others. All these circumstances, my dear William, seem to show, that in spite of all that education produces and experience adds to our knowledge, in spite of all that critics have said and may say, our infancy and childhood is the season of poetry. I think it was so in my own life, and I believe it is the case with all who possess any share of talent at all. I do not need to tell you that by poetry, I mean not writing verse, for who has not felt the most glorious thoughts impossible to express? and the great and ecstatic pleasure of writing or explaining fully an idea, I believe, is always accompanied with the consciousness that more glorious and beautiful ideas can be felt than expressed. Thus childhood may be the most poetical stage though no expressions show it, and though the child is unconscious itself. Now that I have thought over this subject, some reveries and strange recollections, like dreams that have long pleasurably haunted me, seem the relics of those poetical days, and I am sure at times I remember some of them. There is a strange fact, viz., that on the point of sudden drowning, or the like, the whole life of the individual, from his youngest days,

has passed before him, accompanied by an aptitude to comprehend the whole; and a writer has most beautifully imagined that the Book of Account of the Bible will be our own mind endowed with a power of contemplating all its past conduct and judging of its propriety. I fear this writing will be illegible.

"Now, how delightful it would be to have an aptitude to understand all, given with a remembrance of the past! I believe the vision would be more beautiful than aught of the conceptions of maturer years. Do write me your opinion about all these points, and excusing the strangeness and illegibility of this letter (I intend to mend the last),—Believe me, yours most affectionately, "GEORGE WILSON."

The few religious allusions contained in those letters are interesting as the only guide by which we may trace his feelings on such subjects; and they are the more so when we remember how strongly materialistic was the tendency of the Medical School at that time. One of his dearest early friends says—"I have a vivid remembrance of a long talk with him one day while he was in the Infirmary Laboratory, in the course of which he lamented the Sabbath service required of him there. This remark impressed me much, for at that time I fear I should have been glad of any seeming work of necessity which broke in upon the Sabbath rest."

Once again was the household darkened by the shadow of sickness unto death. John, the gentle, loving twin-brother of George, had never been robust, and pulmonary symptoms had caused anxiety for some years past. Those now became so marked as to leave little ground for hope, and some months of lingering illness brought him to his heavenly home. Blessed months they were to him, for in them he learned the wonderful secret how God can be just, yet the justifier of the ungodly. Instead of murmuring at the wearisome days and nights appointed him, he rather most gratefully rejoiced that time had thus been given to work out his salvation with fear and trembling. A friend already mentioned[1] says of him, "He was a sincere and lowly Christian, and died in perfect peace, leaning

[1] *Ante*, p. 26.

frequently alluded in after life to the influence this meeting had on him."

The Session of the succeeding winter, 1834-35, besides continued study of anatomy under Mr. Lizars, brought Surgery and Materia Medica into the field. Two years previously, Dr. Christison, the present accomplished Professor of Materia Medica, had been transferred from the Chair of Medical Jurisprudence to that which he still holds. "In his hands the subject soon became one of the most attractive to the students. A museum, still in many respects unrivalled, was, by indefatigable exertions, furnished step by step with illustrative specimens. Many of these were botanical, a few mineral, gathered from all quarters of the globe. A large number were chemical, and were chiefly prepared in the laboratory attached to the lecture-room, where, assisted by some of the more zealous lovers of chemistry among the students, the Professor spent many hours each day in chemical research."[1] Of this laboratory we shall hear again. Mr. Turner, the Professor of Surgery, "was a most uninteresting lecturer; a timid, shy man, who could not look his class in the face, and seemed fitted by nature for anything rather than the duties and responsibilities of an operating surgeon."[2]

The following letters to Mr. William Nelson, then in Glasgow, speak for themselves. It will be remembered that Mr. Nelson was a school companion, and the friendship then formed continued through life.

"EDINBURGH, *6th December* 1834.

"MY DEAR WILLIAM,—Convinced that had you had any information of interest to impart, I would have received a letter from you, and feeling assured that any information from Edinburgh will be acceptable, I take the pen to communicate to you all that I conceive will prove interesting. My time at present is fully occupied in the active acquirement of my profession; from nine in the morning to nine in the evening, the Infirmary and classes leave me scarcely a moment to call my own, and it takes

[1] 'Life of Edward Forbes,' chap. iv.
[2] *Ibid.*, chap. v.

me from nine to two or three in the morning to study the subjects of lecture. With anatomy, surgery, and materia medica, I find my time fully taken up through the whole week. They are glorious studies: the first I have long admired; the two latter are almost wholly new to me; not that I have not been more or less for the last two years of my life occupied in the minor duties of both, but I never conceived that the laws of either were so curious and interesting. I find my mental faculties most agreeably and usefully employed in the study and observation of the singular phenomena of both. Forgive me, if, in the above lines, I appear to be too egotistical, but I believe that in corresponding with an intimate friend it can scarcely be avoided; and an account of your own feelings, and pursuits, or productions, will be far more interesting to me than the most detailed accounts of all that takes place at the Broomielaw. But I have no fear of being troubled with news of the latter description; and no professional duties will prevent me from enjoying and answering your letters, for though my time is well employed during most part of the week, yet I have Saturday evening to myself, and therefore no excuse for neglecting you.

"On the last Saturday of November, the College was officially opened by the Right Reverend Principal, a practice always followed in the English Universities, and which would have been adopted in the Scotch metropolitan University also, had there been a room large enough to contain the whole number of students. The students assembled in the hall of the library, and listened to a wonderfully erudite discourse from his reverence. I quote to you a passage from it, not pledging myself that the words I employ were those used by the Principal, but that the sentiments are faithfully preserved.

"'Young gentlemen, there is one practice which I feel it is my duty to check—a practice which is very improper in itself, and which I am convinced you only practise because too little attention is paid to it in preparatory schools: it is that of making *balls of snow.*' The students had all been listening with deep attention to the sage admonitory preface; but when, instead of animadverting on any flagitious practice, or blaming swearing, etc., the Principal's only intention was found to be to correct the

yet the possibility of my death being a violent and sudden one, preventing the arrangement of such things as this, has induced me to preface this book that those into whose possession it may designedly or accidentally come, may perfectly understand the cause of its being written.

"Several evenings ago I had a curious dream, different from any preceding one, both as to kind and degree. I awoke in the middle of the night surrounded by deep darkness and utter stillness. I had the most distinct sensation of having been *dreaming*, although the precise nature of the dream I could not *recollect*. I felt a strange indescribable sensation of great happiness, evidently a continuation of the feelings which had possessed me immediately before awaking, and there was no evident cause to excite such lively feelings of delight. I had the sensation of being alone in some great hall or boundless valley, in a state of the utmost loneliness and stillness imaginable, yet pervaded with a feeling of intense happiness, and that happiness calm and deep, in no way partaking of the character of idle mirth or careless levity, but accompanied with a feeling of the deepest solemnity and reverential awe felt for some invisible being of great power, to whom I had some *dim* idea I was indebted for the feelings of pleasure; but my thoughts were so intent on reflecting on the curious condition of happiness, that I turned my attention very slightly to the cause of their occurrence. I awoke, but this feeling of deep happiness did not immediately disappear, not indeed till it had been much the subject of reflection and analysis.

"I have no remembrance of having such a dream before. My dreams are for the most part, in health, ludicrous, in disease, frightful; but in no way resembling the dream in question. It may be plausibly accounted for. On the preceding evening I had been reading, with feelings of great admiration, the 'Confessions of an Opium-Eater,' and in addition enjoying the conversation of a highly intellectual and imaginative friend, and retired to bed under feelings of great excitement, more especially my imagination called into play; and it may be supposed that such a state of mind easily produced the effects in question, i.e., the dream. This would go to prove the truth of Dr. Macnish's

theory regarding dreams, that we dream all the night long, and that the reason we do not recollect them is because memory is not called into action. If that theory is correct, and I think it is, what glorious visions I must have lost! what entrancing pictures of seraphic beauty and unimaginable glory!"

On the next page is a morsel of Infirmary life, in writing which he seems to have been interrupted, for it closes abruptly in the middle of a sentence. Two pages have been left blank for its continuation, but the story was never resumed.

"*January 5th*, 1836.—I have this day had to perform one of the most melancholy duties which it has fallen to my lot, for some time, to perform, the burying of a stranger in a foreign land, in the cold grave. 'Tis about two months since I was struck, in going round one of the wards of the Infirmary, by the handsome contour of one of the patients, and the exceedingly beautiful forehead towering over a Grecian nose and well-formed features. I learned he was a German, a *valet de place*, who had been travelling from Aberdeen to Edinburgh, but in getting off the coach had had the misfortune to twist his leg at the hip. The pain and inconvenience were slight at first, so as not to prevent him travelling on; but on reaching Edinburgh he began to suffer more and more, and at last the pain and inability to move the limb which he experienced, increased so as to prevent walking, and he came into the Hospital. For some days the injury appeared a trivial one; he was cheerful, in good health generally speaking"----

At the death of this man, no friends were found to claim his body; and the thought that his "beautiful forehead" should be touched by the dissecting-knife, George felt to be unbearable. He could not, however, undertake to be responsible for the necessary expenses, so many demands did the patients make on his slender stock of pocket-money. The result of anxious pondering how his object might be accomplished was, that he searched out some Germans, waiters in one of the clubs in town, and telling them of their countryman's death, he assured them that, if they claimed the body, his stock of clothes would amply

refund all outlay. Their acquiescence was readily gained to this plan, and he and they were the mourners at the funeral.

The gratitude of the men for this act of kindness was great. Not content with thanks, they said, "Oh, sir! is there *nothing* we could do for you? would you like to see the club-room?" He did pay it a visit to satisfy them that it was in their power to give him pleasure. One memorial of the patient he retained, a German prayer-book, hoping at some future day to visit his native place, and communicate with his friends.

This unprofessional cheating the dissecting-room of lawful subjects was not a solitary case. Where his love or interest was excited in patients, their bodies had a sacredness in his eyes, and at almost any sacrifice he would save them from what he deemed desecration. It may be supposed how much more strongly such feelings influenced him in reference to relations and friends, for whom his affection was so strong, and almost passionate in degree, as to surprise those who casually became aware of its nature.

He was, in the days we now speak of, an impetuous, ardent, and often impatient youth, capable of any act of unselfish devotion to those dear to him, but abounding in strong and sometimes unreasonable aversions; yet, with a certain waywardness, there was mingled such a winning grace that it was a notorious fact that when he chose, consciously or unconsciously, to exert the power, no one could refuse him aught he asked. Indeed, throughout life his powers of "coaxing" were often called into requisition in cases where others had failed. Thus, while a student, he was applied to by ladies whom he knew, to try what could be done with an old woman in Portobello, a sea-bathing resort a few miles from Edinburgh. She was aided by a charitable society, but for her own sake it was most desirable she should become an inmate of the hospital. All persuasions or entreaties to this effect, however, were in vain; and so week after week had passed, till George went down, and to the unbounded astonishment of the ladies, brought her triumphantly to town in a cab, and deposited her, a subdued and willing captive, in one of the wards. From this digression, we return to the private journal, as the best source of information in regard

to the inner life. The entries are more full in the first month of its existence than at any future period, though some of them are too sacred and personal to be made public.

"*January* 11*th.*—Logicians have given much attention to the study of the emotions likely to be legitimately excited by certain occurrences, and on this point Dr. Abercrombie has most particularly dwelt, and yet I cannot perceive the possibility of ever ascertaining or fixing what emotions should originate from known causes; for in every individual these emotions must differ as well in kind as in degree, and there appears to me no subject better fitted than this to show, to prove, how much mind differs in different individuals, and how essentially it is the reflection of the mind on objects and events which is the greatest cause of joy and sadness, and delight and horror, and not those occurrences themselves, so much so that we often find that the contemplation of such objects awakes startling, striking, and vivid feelings, which these objects themselves did not excite, though apparently calculated to do so. There is a curious case illustrative of this in the life of the celebrated physiologist, John Hunter. This gentleman had among a collection of animals two leopards, which by some accident escaped one day. Hunter was aroused from his studies by their noise in endeavouring to get away; and on running down, found them attempting to scale the walls of the court-yard. He courageously sprang forwards, grasped each by the neck, dragged them back to their den, and secured them; but on retiring again to his study, he was so struck with the risk he had run, and the extreme hazard of the attempt, that the thought almost maddened him. The longer he thought, the more forcibly was he struck with the thought of what danger he had been exposed to. To adduce another case, in one of the autumnal months a summer or two ago, walking along one of the tributary streams of the Tweed, I was struck with the appearance of an old castle near the river. This castle (the Drochill) being in excellent preservation, I walked up to it, and after viewing its external excellences, began to examine the internal accommodation of the donjon-keeps. Looking into one, I saw it had a hard, firm floor, and jumped down through the window

to examine it. Unfortunately I had made a very great mistake as to the consistence, and instead of landing on solid ground, I descended to my knee in a mass of mud and green weeds and water. Immediately on feeling myself sinking, I made a convulsive spring at the window, and grasping the stone lintel with supernatural energy, raised myself with the utmost ease from this quagmire, although unassisted by the desperation of the moment, I believe I could not have made my way as I did. My first feeling on reaching solid ground was amazement, succeeded by involuntary laughter at the absurd mistake of thinking a ditch of water *terra firma*. With the utmost alacrity I immediately proceeded to remove the mud from my nether limbs, and an adjournment to the neighbouring river soon removed all the adventitious stuff I had acquired in my luckless leap. I laughed a good deal on thinking of it, and soon banished it from my mind, nor the whole of that day did I think of it. But at night while lying alone on my bed in utter darkness, when the circumstance came back on me, it awakened thoughts of a fearful description; for the keep might have been fourteen feet deep, as well as three or four, and I might have sunk and died a most horrible death, and my mysterious disappearance must have been a source of great sorrow to my friends; and when I thought of all these things, I was so horrified that I eagerly courted sleep to banish thoughts of so terrible a description; and even yet, after the lapse of many a month, my heart throbs with unusual emotions, and the thoughts excited are still painful and horrible.

"The two preceding cases are curious in showing how false the common idea is, that when causes of joy or grief are over, the effects will cease; but in all minds of any power, both will be immeasurably increased by reflection deepening their hues and heightening their effects, and producing deep and ineffaceable impressions on the heart of the thinker.

"There is another curious thing with reference to mental phenomena, which I note down here as very curious and interesting, that in poets and men of fervid, gorgeous imaginations, whose minds are essentially non-mathematical, and who do not particularly care for sciences or mere matters of fact, their most

splendid and striking productions have often been, not the result of thinking over the subject to find what could be made of it, but from the subject, or some part of it, as in some way connected with it, striking their mind as being particularly curious or novel, and the perception of that unique beauty has stimulated their mental powers, and led to their brightest effects. To take an instance, the talented and imaginative author of the 'Last Days of Pompeii,' has mentioned in the preface, that the idea of introducing a blind girl into that delightful book, was derived from a remark of a friend that the blind would be the most advantageously situated of all when the pitchy darkness covered the devoted city, for to them it would make no difference, and they could easily make their escape, when those gifted with sight would be confounded with the unusual darkness. This remark, one of sterling beauty and originality, seems to have struck the mind of Mr. Bulwer, and sunk deeply into his thoughts, and from the revolving in his mind of this simple remark, has given rise to a beautiful creation, the blind Thessalian flower-gatherer, Nydia, one of the most exquisite characters of the work; and I please myself with imagining what delight Bulwer must have felt, when the idea shot into his mind, and he saw what a rich and beautiful chain of incidents he could elicit from the remark of his friend; for whatever were his intentions in resolving to write 'The Last Days,' the introduction of the blind girl into his work has evidently had a great influence on the whole plot and characters of the book. And the above might easily be shown to be the case with all poets in whom the feelings of delight from such slight remarks as that alluded to, are among the most signal proofs of the intensity of their genius, and the excellency of their powers of creation, as well as palpably demonstrating how much their minds must differ from those of other men."

"*January* 12*th.*—What a great and wondrous change comes over the mind emerging from boyhood to youth, at sixteen or seventeen. What a change spreads itself over every thought and feeling, and how does it deepen and render more intense every emotion. When I was a boy at school, my thoughts were brilliant, my wishes ardent, and my cares few; and, lo! now

what an alteration, that which was liked is now beloved, and that which was disliked is now abhorred. The pleasure of school-boy life was in a great measure the result of a consciousness of animal life; the feeling of being a living creature, as Moore has beautifully expressed it in 'Lalla Rookh,' is sufficient to give happiness; but when sixteen or seventeen has arrived, along with the striking and rapid development of the body, the mind also increases in all its capabilities. With what different feelings do I now look on objects calculated to excite strong emotions. What rapturous feelings of delight are excited in my heart by the contemplation of the 'Beautiful,' whether it be the beautiful in physical or mental conformation, or in composition, elocution, poetry, or means to an end. Whatever can claim title to the term beautiful in my estimation, awakens in my heart feelings of uncontrollable emotion. How delightedly do I gaze on works of art or design, such as Martin's or Turner's, or the sculpture of the renowned masters, the Medicean Venus, or the Graces of Canova. How rapturously and passionately do I dwell on beautiful poetry, or the wild imaginative works of rare genius; and how pleasing it is to contemplate God's provision in this world! So great an ecstasy of happiness have I felt from the above-mentioned causes, that it seemed that death could be the only termination of feelings which were utterly opposed to the daily occurrences of the world. But in sad subjects as much are my feelings deepened in intensity: the cries of distress, the moanings of anguish, break on my heart far more acutely, and sink into my heart far deeper, than they ever did heretofore; and the prospect of evil and misery, and sin and woe, affects me much more powerfully than it did of old. In short, now my mind is much more developed than two years ago, and can ascend and descend much more widely than it could at that time, and my joy or sorrow is much more the result of legitimate causes than it was then."

"*January* 14*th*.—What a horrible thing remorse is! how fearful in its influence over the soul; clouding all the gay prospects that have been opened to its view; throwing a black and gloomy shroud over the fair and beautiful, and tinging every emotion of

the same ghastly hue, whether the mind may have been turned to really proper or merely frivolous pursuits; and how balefully and abhorredly gleams back on my own mind the recollection of the multitude of accursed sins I daily commit;—my exceeding and ungrateful unkindness; my wayward temper, and my excessive irritability so much increased lately, that even the slightest noises are sufficient to enrage me. Would that I could, with Divine assistance, overcome, banish them, and turn the mental activity to more useful purposes."

"*July 2d.*—Bulwer's 'Nydia.'—Every time I read the songs in Bulwer's 'Last Days of Pompeii,' I see something new to admire, and of these I would take for subject of notice at present 'The Song of the Blind Flower-Girl.' Beautiful creation! I have formerly referred to it while speculating on the causes which gave rise to the idea of its mention in his wildly beautiful book. This song, like the whole of the poetry in the volume, has evidently been the production of elaborate revision, added to a highly-cultivated imagination; and it has that character of true poetry deeply impressed on it, that each repeated perusal brings to light new beauties and rarer excellences, and, as one has justly remarked, that idea must have something new, or striking, or beautiful which comes unbidden to the heart, and, beckoned by no effort of the will, presents itself to the mind when not wholly engrossed with some other subject. And often have the ideas of that song come to my recollection, with their rare beauty and most affecting comparisons, almost making the tears fall in sympathy with that which, though in the present case the imagined declaration of a fictitious being, is so similar to what many a one may or might have said with all justness and truth, that it must awaken as much compassion for the mournful state of the blind as could have been excited by that which was known to be the faithful record of a real occurrence. There is great art displayed in making Nydia, after referring to the Earth as the mother of the flowers, ask—as if in a lower voice, in parenthesis,—

'Do they her beauty keep?'

And how beautifully is the allusion to the Earth, as their parent,

kept up! How much is the unity of subject preserved; how true to nature is the whole picture! The fond mother represented sitting with her young children fast asleep in her lap, bending

'With her soft and delicate breath, over them murmuring low,'

and kissing them so often, that, when taken from her,

'On their lips her sweet kiss lingers;"

while yet, with that strange, curious paradox of the mind,

'She weeps, to see the young things grow so fair.'

How exceedingly natural the last idea is! how consonant with the experience of mothers—of all mothers, I firmly believe, who have ever fondly loved their offspring! Yet it is a strange and most curious phenomenon of the mind, that the seeing beloved objects growing more endearing should make the heart overflow with tears. It is too curious a subject not to have received the notice of those who are fond of metaphysical inquiries. Isaac Taylor, referring to the subject, says: 'No position of the mind is more peculiar than the one it occupies when, at the same moment, the reasons of hope are irrefragable, and the motives of despondency are overwhelming.' (*Saturday Evening*).—And I recollect to have read, in 'The Confessions of an Opium-Eater,' a reference to this, in which De Quincey gives the only attempt at explanation of this phenomenon which I have seen. That writer mentions, that he could never walk out in a beautiful summer day, and see all nature prolific in life; the air, and earth, and waters teeming with myriads of animate beings; the hills crowned with forests, clothed with full foliage, and the valleys rich with the freshest verdure,—he could not look on all this without a deep feeling of mournfulness coming on him, which he conceives most truly to depend upon the antithesis between summer and the profusion of life, and winter and the silence of death. And following out the subject, he conceives it a fixed law of the human mind, that if two objects stand in relation to each other, as things utterly different, the one will suggest the other. Thus does the wild profusion of life suggest the solitary silent loneliness of death; and thus to the mother will the sight of her young babes, day after day growing fairer, awaken in her mind

the dread of pain, and disease, and death; and the fond, loving, hoping, and fearing heart will find relief only in the overflowing of the 'well of a mother's love,' which has so often dropped its scalding tears on the face of the fair young babe that reposed in quiet rest on its parent's knee."

"*July 10th, Sabbath Evening.*—I have opened the Bible this evening to read one of its most beautiful and striking passages, the 15th chapter of First Corinthians, containing the full description of the resurrection of the dead, one of the most solemn and seriously interesting subjects that can occupy the mind. Solemn it is and must be to all, the idea that the period of our existence in this world is but a minute fraction of the period during which we are to exist as immortal souls. I have often thought with sadness on the dim, dark vista, down which the Ancients must have looked when they contemplated death. How must the mind have recoiled from the idea of annihilation! A Catiline might deem such an ending no undesirable thing; but would not the thought of it throw a cloud over the musings of Cicero or Plato? How must the man of the world, the Epicurean, have seen the locks clustering over his forehead becoming grey and lustreless, his eye becoming dimmer and duller, the smooth cheek becoming invaded by wrinkles, and care stamping his image on the furrowed brow! Mournful must have been the spectacle, each new wrinkle, each additional grey hair adding to the despondency that already was invading the mind: the wine-cup and the evening libation might bring hope and joy to the soul, but the morrow would bring the aching head and the desponding heart, and bid all the woes stand forth in a more sorrowful array. This is no vain conjecture of mine: doth not Horace abound in multiplied reflections on the 'Inexorabile Fatum?' and in vain for him were woman's blandishments, and 'the spiced Falernian wine.' He tells in sorrowful strains of the inevitable end, and the visit that all must make to the black Cocytus. Sorrowful picture of this world's joys ceasing to delight the heart of one who knew no more enduring pleasures, whose most joyous prospect beyond this planet was extinction and annihilation.

"A curious task it would be, a pleasing and not unprofitable employment, as I have long thought, to see in what manner the old Roman and Grecian philosophers looked forward to death, and met him; how all the varieties of sects, both of the old times and the more modern ones, resigned the joys of this earth, and grappled with that invisible but terrible foe; but it will require much reading in many languages, and the reflection of maturer years, before this can be attempted.

"I turn, then, to the solemn description of St. Paul (passing over some symbolical tokens, which do exist in nature, till another time). In a strain of the most beautiful and impressive reasoning, the Apostle proceeds, step by step, to show that the resurrection of Christ from the dead was at least undoubted, and combating the doubts of those who questioned the reality of Jesus' rising from the dead, and yet preached eternal life, by showing that if Christ have not risen from the dead, then the resurrection of men cannot take place. If God did not, or could not raise to life his Son Jesus, he would not resuscitate human beings; but, on the other hand, the evidence being complete that Christ was raised from the dead, becomes a point whence the necessity of our resurrection may be shown; and he continues to describe the glories of Christ, summing them up by stating, that 'he shall reign till death, the last enemy, shall be destroyed.' He continues to show that the question is vain, 'How are the dead raised up?' For the peculiar manner in which the dissipated elements of the human frame shall again form the perfect whole, we cannot explain or understand, nor is it of importance we should. We are told that the body 'is sown in corruption, it is raised in incorruption;' and that the change will be of a most important kind is shown by the 50th verse, 'Flesh and blood cannot inherit the kingdom of God, neither doth corruption inherit incorruption;' and this mystery the Apostle, eagerly entering into his subject, dwells more pointedly upon in the succeeding verse, 'For this corruptible must put on incorruption, and this mortal must put on immortality;' and finally, he concludes the course of reasoning by exhorting the brethren to be steadfast, 'forasmuch as ye know that your labour is not in vain in the Lord.'"

This is the last entry for the year 1835. The quotations are given, not for their intrinsic merit, but chiefly as showing the metaphysical bent of his mind at that age. Like the glass window of a bee-hive, the journal reveals the workings that produce the beautiful results, permitting us to hear him thinking, as it were. The comments on 1 Cor. xv. derive interest from their being the first evidence of his pondering the subject of the Resurrection, which in after life was so reverently and earnestly studied. In some points regarding the resurrection-body, his views were different from any he met with, and he frequently expressed, up to within a few weeks of his death, a purpose of extending those of them already committed to writing, and embodied in an Address to Medical Students. The reading aloud of this chapter at his own funeral service had a touching significance for those of his friends present who knew his special love for it, and to whom it seemed inseparably associated with him.[1]

The Session of 1835-36 found him attending the lectures of Professors Alison, Home, and Syme, on the Institutes of Medicine, the Practice of Medicine, and Clinical Surgery, with those of Mr. Lizars on Anatomy. Attendance on the hospital wards was also continued as before.

In May, the pleasures of botany were renewed under Professor Graham. As a boy we have seen the attractions this science had for him, but many occupations had placed it beyond his reach for years. The blank page of a note-book for botanical extracts gives this entry:—

"*May* 15*th*, 1836, *Sunday*.—An annular eclipse of the sun took place this day: the next day I commenced my botanical studies seriously. G. WILSON, Monday, 16th."

[1] The following fragments of conversation are preserved on this subject. They are written in pencil, as, owing to his mother's inability to hear his voice unless raised to a high pitch, it was often his custom thus to converse with her:—"I have thought a good deal about the resurrection-body. It is every way a great mystery. Our bodies will not be like that of Lazarus, the old body over again; nor like that after Christ's resurrection, but rather *in degree* like his after his ascension. . . . The Saviour said he was not a spirit, but had flesh and bones, and he ate before his disciples after his resurrection; yet the hands were still pierced, and the spear-wound leading to the heart remained."

The "prelections were delivered in a pleasant lecture-room in the Gardens, where the foliage of the luxuriant trees, which peeped in at its windows, served as window-blinds, and singing-birds took the place of the College bell."[1] The lectures are given at 8 A.M., and most students, accustomed to late hours of retiring, find an effort required to accomplish the necessary feat of early rising; but how pleasant are the remembrances of the return of George and a friend, as daily guest—Mr. Williamson, a fellow-apprentice and clerk in the Infirmary—to a late breakfast, very hungry, and full of fun, with flowers in their hands which had been used as specimens in the course of the lecture. They never could agree as to which of two routes was the shorter way home, and each holding to his own opinion, they parted at one point, and met in time to arrive together. The sight of a magnolia never fails to recall those merry breakfasts, from an image stamped on the memory of a morning when that flower had been used for illustration at lecture. "To an extent unknown elsewhere in Great Britain, least of all, perhaps, in London, the energetic and genial Professor led his students, each summer's Saturday, on a botanizing march in some direction across the country within a few miles of Edinburgh. In the autumn he headed a smaller party on a continuous excursion of a week or more, to more distant districts, such as Clova in Forfar, Sutherland, the Welsh Hills, or the Lakes of Killarney. The field-botanists who made those campaigns acquired a knowledge of plants, such as the closet study and the fingering of herbarium-mummies cannot give. They gained health to the bargain, and enjoyed not a little fun; whilst now and then, like other campaigners foraging in lands not their own, a *casus belli* would occur, and the invaders be accused of forgetting that the fields in which they were reaping what they had not sowed, were the property of neutrals, who could forbid their presence if they pleased. The more thoughtless students alone gave occasion to complaints, which were rare. Genial and hearty though the Professor of the day—Dr. Graham- was, he could become the stern provost-marshal if occasion demanded. But the hearty welcome shown year after year to the

[1] 'Life of Edward Forbes,' chap. iv.

University botanizing parties, by those who have long received their visits, is the best proof that the landed proprietors and farmers, whose grounds were traversed, were willing to excuse a little youthful folly, for the sake of the good which so largely preponderated."[1]

The advantages to the students were, however, very inferior to those offered now by the liberality and enthusiasm of the present accomplished Professor, Dr. Balfour. Instead of the hundreds of beautiful diagrams, the profusion of specimens, the carefully arranged microscopes, and the richly stored museum, "it was a dispute among the students whether Professor Graham, an accomplished botanist of his day, had *six* or *seven* diagrams to illustrate the structure of plants. A microscope was never seen in the class-room, and the majority of students could not have told with confidence what end of the tube should be put to the eye. No instruction was given in dissecting or examining plants, further than by pulling them to pieces with the fingers, and examining them with a pocket lens. There was no subdivision of the class into sections, who, in convenient small groups, could be tutorially taught from the systematic arrangements of plants in the garden, or the rare exotics in the greenhouses. Finally, though every student was laudably encouraged by precept, prize, and example, to collect a *herbarium*, and preserve a *hortus siccus* of the smaller plants, a mausoleum of the giants was unknown, and a museum for them would have seemed to most like a sepulchre in the midst of a garden of roses."[2]

George Wilson's hours this summer were very fully occupied; but while it was his custom to enliven the family circle with details of each day's doings, humorously told, it was evident that some mysterious work was going on, to which no clue was given. At the close of the session, revelation was made in the following manly record of hopes disappointed. The letter is to his elder sister, then in broken health, and a guest at the Cumbernauld manse; though without date or postmark, internal evidence leaves no doubt that it was written in 1836.

[1] 'Life of Edward Forbes,' chap. iv. [2] *Ibid.*

"EDINBURGH, *August 2d.*

"MY DEAR MARY,—The mystery of the essay shall be made known to you, and that which cost me so much trouble to conceal, and so many equivocations to keep secret, shall now be fully made apparent to you.

"The essay was written to compete for a medal given by Dr. Graham, but I have been unsuccessful, and the unwearied labours of nearly two months, and the fond anticipations of three, have been disappointed. Seven essays, a much larger number than usual, were given in, and two students unknown to me obtained both prizes. The morning on which they were decided was excessively stormy; but, nothing daunted, I trudged on to the garden. As the period which was to decide the matter drew near, I became, of course, very anxious; but when Dr. Graham read out the motto, and I saw that all hope was over, my heart, which had been throbbing violently, became as calm as that of a young babe. I quietly listened to all he said in praise of the successful competitor, and when the ceremony was over, I arose, habited myself with firm, stoical apathy, and trudged home, 'chewing the cud of bitter fancy,' and all that day I dedicated to calm, sober, thoughtful meditation on the decision of the morning. I was cast down, but not despairing; distressed, but not hopeless; and in vain did I look back on it as a reality. It appeared but as some horrible dream which has scared away the quiet slumbers of midnight, leaves behind it no forcible recollection of what was the cause of horror, but a dim, confused spectre-like remembrance of some unusual occurrence, which excited feelings of no pleasant description. It is now, then, decided; and the gold medal which in imagination hung before me, for which I deprived myself of rest, and leisure, and summer walks, and the company of those I loved, has passed away to reward the labours and talents of another aspirant for fame.

"But although thus far I have been disappointed, there is much to mitigate regret; the successful candidate is a much older student than I am. I gainsay not his talents, and do not know him in the least; but from anything I have heard, he is a talented, clever young fellow; and what is of far more im-

portance than the latter cause, I have the inward delight of knowing that I have acquired an immense mass of knowledge on an important but very little understood subject. And besides, there is no goad so piercing as that of disappointed but honourable ambition. I have lingered not, nor wasted time, nor spent any period in vain and needless regrets. I commenced the following day several important works on other subjects, which demand much attention. I have too much to occupy me, too much to do, too much expected from me, too many wild aspiring dreams, to dedicate time to unavailing regrets on a subject which is fixed, which has taught its bitter lesson, and must now go by and give place to higher subjects. So the mystery is explained, though not in the way I hoped to have done. You will pardon, then, all the *seeming* unkindnesses which that essay made me guilty of, and deem me not acting unbrotherly again if I should work away in quiet solitude at my studies. All students love peace and solitude; the nurslings of hope must be long cherished in secret before they can be given forth full fledged to the eyes of all; the busy workings of the mind, the knotty points, the puzzled understanding, the tortured, racked, mental attention, the new and delightful idea, the original thought, the logical sentence, and the flowing line, are the sorrow and joy sacred to the breast of the student; the finished work, the wound-up labours, the polished sentence, and the clearly expressed thought, are the property of all who care to regard them. If, then, my dear Mary, I should keep to myself, not from perversity or any wicked cause, but solely from necessity and mental constitution, the thoughts and studies I am busy in pursuing, do not consider me unkind. The end of the working, the consummation of the labours, the ended duties and concluded studies, if they produce anything worthy of attention, anything important enough to justify its being sent beyond the studio, to whom shall it more readily and eagerly be given than to you, for I know affection will magnify its beauties, and love pass over its faults. Should you wish to see this essay at Cumbernauld, I shall at once send it, premising that it is a copy in my own handwriting, in a great hurry, through which you will have to wade to find out the drift of the production."

Along with botany there had been pleasantly associated this summer the pursuit of chemistry, under Professor Christison. On June 2d, he writes to Miss Mackay, Glasgow,—"I am now with Christison, labouring away under his superintendence at all sorts of chemical operations, analysis, synthesis, etc. etc. I have got a corner to myself, and the whole laboratory, with all its contents, at my disposal, and depend on it I'll make good use of them. I have had many a project, which the limited and fragile nature of my chemical apparatus, consisting of a few tubes and vials, prevented me ever putting to the test of experiment, but now I shall stick at nothing, and be sure I'll always be busy with something of my own." His small sleeping apartment at home was fitted up in every available corner with bottles, flasks, retorts, and such paraphernalia. His younger sister Jessie was his assistant, and had the vials handed over to her for washing. She was led to form an alarming opinion of Dr. Christison, from being so frequently told, on presenting what seemed to her a vial made clean and pure by much trouble, "Ah! if we had offered that to Dr. Christison!" But notwithstanding the difficulties of her post, the child enjoyed much her office, and did her best for the bottles. Some small portion of his enthusiasm made her at least respect what was evidently so important and interesting. In the fourth chapter of Professor E. Forbes' 'Life,' already so frequently alluded to, the marvellous changes in pharmacy, of which the dawn now appeared, are dilated on at length. Much of it possesses biographical interest, and, for the sequence of our story, we shall again dip into it:—"As one of these [Professor Christison's] assistants, I speak from personal experience to the profound impression of a mighty change passing over medicine as an administratrix of substances, which in one sentence are food, in another medicine, in another poison, which my daily laboratory work made upon me; and together with a gifted fellow-student and fellow-chemist, the late Samuel Brown, I often, as we watched a process, wondered at the changes which ourselves had witnessed, and, with the hopefulness and confidence of youth, echoed the prediction that these were but the first-fruits of a far more wondrous harvest which should yet be gathered. . . . The spirit of the alchemists

was in us, but we had realized that it was not an elixir of life, but an elixir of health, that we had to seek."[1]

The much-needed relaxation of autumn came at last. To his sister he announces its approach :—

"EDINBURGH, *Sept.* 3*d.*

"MY DEAR MARY,—If it will be in any way interesting to you, I may let you know that I hope to be in Glasgow on the second Monday of September. I shall be at Dunoon on Tuesday, and then I shall be able to consult and determine with you as to the propriety of returning home or prolonging your stay. Perhaps you will be persuaded to wait a few days longer, to be my *cicerone* over all the beauties of your present habitation; nor can I exclude from my mind the hope that I shall obtain an introduction to my brother-practitioner the medico of Dunoon, from whom I expect much pleasure and profit, in consequence of all the information Daniel has given me on the subject. I think I shall have no difficulty now in getting away from the Infirmary. We have got two new apprentices to lighten our labours, and give me an additional right to claim three weeks of absence. I have been sleeping in the Infirmary for the last month, to let C. away, whom I intend paying in his own coin, to teach him the propriety of keeping good faith with people. I cannot say I have been about anything particular since I last wrote. The translation of a French work on the Natural History of the Ibis of the Ancient Egyptians, and a few verses written on the same subject, are the sum of my literary labours. The shifting to the comfortless room in the Infirmary has prevented me following the strict course of study I had laid down for myself, and the closing of the library for three weeks prevents me reading new books. I am diligently engaged at present studying the history, geography, and political constitution of Egypt, and its talented governor, Mehamet Ali, who raised himself from poverty to sit upon the throne, and whose treacherous murder of the Mameluke Beys, I have no doubt you are well acquainted with. In spite, however, of this sanguinary deed, and many other despotic

[1] 'Life of Edward Forbes,' chap. iv.

acts, he promises, from his powerful, energetic conduct, his well-disciplined armies, and his just views of civilisation, to raise the abject inhabitants of the Fair Valley of the Nile to some considerable eminence even among civilized nations. And though the last three weeks have been less profitably employed than they would have been if I had been staying at home, yet I have not been altogether idle, and I think I shall be able to enliven your walks a little, and add some more pleasure to your sojourn in Dunoon, by some of the many subjects, grave or gay (which of the g's will you have), which afforded us food and merriment in this our native city; and I shall be sure to hasten down the Clyde as fast as I can to see again my two dear sisters. Meanwhile, I have ceased to count the period of my stay in the hospital by years, or months, or weeks. Every morning of the last week, in arising from bed, I have said, 'Here beginneth the tenth day,' and so on. Now it is the eighth day, and one week sets me free, and I shall study no more till I return from the west. What with packing and scraping things together, and seeing grandmother and aunt, and every other friend, and gathering letters, I shall feel very little inclination to sit down to ponder over any grave abstract, or wear out brains and eyes in endeavouring to master the mystery of the Atomic Theory. All these wise doctrines will have to lie by on the shelf, like many better things, till I have snuffed the air of the west, and floated down the Clyde; and then, refreshed and recruited, I shall return, I trust, to laugh at every difficulty, and distance every opposing restraint. Hem! the less said of that matter the better; however, the week that remains I shall dedicate to 'Egypt and its Gods,' the 'Life of Baron Cuvier,' and some light works, that there may be no dull days to embarrass my mind in my wanderings, or any stiff restraints to damp my energies. All the little pieces of news shall be carefully hoarded up for a personal interview."

The two following letters were written during this holiday time. His host in Rothesay, and companion to Arran, Mr. Campbell, had been a fellow-student, whose acquaintance had been made at the defunct Zetalethic Society.

"ROTHESAY, *Saturday, September* 1836.

"MY DEARLY BELOVED BROTHER,—As the weather up to the Thursday of the week has been delightful, I have seen the country under its most beautiful aspect, and the rain and clouds which now overspread the sky give rise to scenes which could never have been presented to the eye in sunlight. Before I say anything of my own views or actions, allow me to tell you one thing which I gathered from my companion on the coach to Glasgow. He had resided for a winter in Banffshire, and often saw the Aurora Borealis, in beauty far excelling its appearance in our more southerly locality. One appearance which occasionally presented itself was that of a great sheet of light waving back and forwards in the sky. You know to what delightful ideas such a description gives rise. In pleasing meditation I laid myself back, in imagination beholding this great curtain of green and silver light waved to and fro in the heavens by the hands of archangels, the drop-scene as it were of heaven, which, rolled back as a scroll, would show the cherubim and seraphim hymning to their lyres; and often last winter when walking out late in the evening, when the aurora was flickering in the sky, I have watched with delight a dark mass of cloud seemingly rent asunder to show a scene of dazzling unearthly brilliancy, from which I have hoped with a fond credulity to see an angel's face look down; but why need I have recounted the ideas given rise to by the stories of other men and other days? have I not with mine own eyes seen enough to delight and amuse without at all referring to extrinsic things? I was exceedingly delighted with the view from Dunoon, as I saw it on a day the most beautiful; the still, calm, mirror sea, now calm and tranquil, bearing on its bosom tiny barks and great vessels, slowly sailing with every sail unfurled to the low breeze, and again its depths foaming behind the gallant steam-vessel. On the later class of vessels I am disposed to look with feelings of greater admiration than men will generally concede to them; and a Liverpool steamer, as I saw it yesterday—alone, in a wide expanse of the deep, moving close to the land, so as to have both the shadow of the mountains and the black clouds thrown over its pathway—appeared so solemnly without a single sail, stalking as it were

through the dark, gloomy waters, that I felt more and more convinced of the propriety of Turner introducing such vessels into his pictures, for, when giving out only a small quantity of smoke, they are truly highly interesting.

"Mr. Campbell's house, situated on a point of the island of Bute, opposite the mouth of the Clyde, has this great advantage, that I can see three lighthouses from the window; and I think I could almost never tire of watching the Toward Point light revolving, now like a dim and distant glimmer, and in a few moments like a star of the first magnitude, again to dwindle down and be almost invisible. There was another reason made me love to sit and watch the Cloch Lighthouse, far up the Firth: you know the practice that has been adopted by two lovers far away from each other, to agree to gaze at night on one beautiful star, so that, as it were, the ray of love passing from the one eye might ascend to the glorious heavenly body, and then, darting down like a sunbeam, enter the watchful eye of the other, and thus pass to the temple of soul; so have I sat looking at the lighthouse, knowing that for a large portion of the day it was before the eyes of two dear sisters at Dunoon, who must often have been gazing on it at the same time it riveted my attention; but I have ceased latterly to watch it, for I suppose you have Mary and Jeanie home.

"This island contains a far greater number of architectural remains than I ever expected to see. The Castle of Rothesay is a large ruin in a fine state of preservation. The great central hall must have been very large, and several of the donjon-keeps are still very perfect. In the churchyard are the remains of a very old chapel; I in vain made inquiries concerning its date or history. It has been built, if I mistake not, in the Gothic style, though not very pure or much enriched with ornament. A very fine recumbent statue of a mailed knight reposes on a tomb, his feet resting on some animal, as I believe is often the case in such statues; one old woman pointed to a grave near this effigy as the burial-place of the 'Big Stewart.' This is all I have been able to learn of his history. In the graveyard itself there is the usual utter want of taste which characterizes country burial-places. The church is a

perfect barn, although they had the old church as a model before them, and the tombstones, covered with absurd inscriptions, are painted white, yellow, or black, according to the taste of relatives; and to crown all, a cenotaph, the property of the Marquis of Bute, is built in rude courses of rough stone, plastered, 'harled,' painted white, and slated on the top. I wonder any one's bones, far less those of one of the aristocracy, could repose in peace under so abominable an erection. Were I possessed of one tithe of the Marquis's property, I should level it to the ground as fast as possible. In the east end of the island, as probably you have learned from mother's letters, there are the remains of an old Catholic chapel. There is nothing very particular about this ruin; it has the Saxon circular arch, and in one case the zig-zag arch; it is not, however, very large. In a wood near, a circle of stones is mentioned as the remains of a Druid temple, and from the immense Cyclopean stones which have been employed in the erection, it is highly probable it was so built. It was certainly with very curious feelings of mingled fear and awe I stood within the circle where centuries ago the unhallowed rites of the Druids were carried on in the deep shadow of close woods; where often the sacred mistletoe bough must have been carried in solemn procession, and the reeking blade sheathed in the quivering heart of the human victim. How true is the sacred declaration, that 'the dark places of the earth are full of cruelty.' Egypt, a country situated under a tropical sun, a fair valley where rain never fell, a region of strange customs and mental habits, and Scotland, in the same era, a wild and uncivilized remote region of the earth, 'where savage men more savage beasts pursued,' however different in other respects, were assimilated in this, that the great prominent features of their religion were the same, 'lust and blood;' in both licentiousness rioted over mankind, and in both the human victim was slaughtered to appease the avenging gods.

"In the long nights when sitting within doors, we have not been idle. We have conjointly edited an 'Agricultural Report for Bute,' in which we are very eloquent on drains; 'An Essay on Mental Haziness;' 'A Love Letter from a Rothesay Gaelic Minister to his Chère Amie;' and finally, I have, at Mr. C.'s

request, indited two love ditties for his boors, and a few verses for Miss C.'s album; so that, recoiling from the charge of idleness, I remain your most affectionate brother,

"GEORGE WILSON."

"IRVINE, *Tuesday, September* 1836.

"MY DEAR MOTHER,—Time hath brought the changes of place which I anticipated, and you will see from the date of this epistle I have arrived at Irvine. The three last days of the week before this were so miserably bad that they were utterly useless in the country—the whole land and sea overspread with mist; not a point of land, not a lighthouse to be seen; nothing but the sea lashed by the angry wind, and the gale not sufficiently strong to give sublimity to the scene. I sat within doors, talking, laughing, joking with Mr. Campbell and his sister, and a fortunate discovery of the 'Essay on Taste,' by the Rev. Mr. Alison, father of the professor, was hailed with great delight, and served to amuse me for a long time.

"On Saturday evening, at six o'clock, Mr. Campbell and I set off in the steamboat for Arran. It rained, till within a very short time of our embarking, very furiously, and under most dispiriting weather we set off. The evening was cold and occasionally wet, till we rounded the headland of Bute. The gale then freshened considerably; the wind blowing on the side of the vessel made it reel and toss very wildly, and the spray was swept over us by the rude gust. I could not go below; I should at once have become sick; so I sat it out on deck. There was something very wild in the night, quite dark, the vessel pitching very much, and the billows breaking in foam upon her; still there was a peculiar beauty in the sky, which could never have been seen in the effulgence of sunlight. Long, long after the sun had set, he sent up a dim flood of light on the edge of a cloud which overshadowed the west, and the appearance of the one still subdued line of light mirrored in the wave was peculiarly beautiful and wholly new to me; and the time passed rapidly on in watching the moon labouring in the sky, in fitful gleams, now shining out, and now behind a dense cloud which she fringed with her light. We arrived at Brodick, the most easterly of the

two villages of Arran, at nine, and immediately disembarked. We were landed on the beach, and set out for the village at a little distance; but soon we were brought to a stand by a great stream which ran right across our path. The army of some great conqueror could not be more astonished at a river like the Amazon or Orinoco, than were we at this impassable barrier. I was just about to walk straight through it, when a stout handsome Highlander came wading through, and carried us across, one by one, upon his broad shoulders. When Mr. Campbell and I had been ferried over, we stood laughing at the strange perplexed look of those whose turn had not yet arrived. I was strongly reminded of the description given by the classical poets of the grim disappointed look of the ghosts who could not afford to pay Charon the small coin he charged for ferrying them over the Styx. Rain and hunger soon drove us away from our benevolent spectacle, and we were speedily ensconced in a far more comfortable room than I had ever dared to anticipate in so out-of-the-way an island. We had tea, looked about us, tumbled into a very comfortable bed, and were soon asleep.

"The Sabbath, though at first wet, turned out a most beautiful day, and we set off for Lamlash Church, a distance of six miles; the walk was very delightful, for a long way through that most beautiful heath country where the heather and bracken are the only plants growing, and for a while we walked by the sea-shore. A splendid rainbow, the most vivid and beautiful I ever saw, spanned the sky, its apex passing over the peak of Goat Fell, the famous and highest hill of Arran. I have seldom seen a more beautiful sight; and after crossing a hill, the bay at the western end of the island burst into our view. I have never seen so fine a bay, so admirably scooped out as it were, and a large island which occupies the mouth of the bay protects it from the violence of the winds. It is confessedly one of the safest anchorages in Scotland, and is accordingly greatly resorted to by shipping; in a gale they come crowding in, one after another, till often, I am told, 150 large vessels will in one night assemble. We entered church; one of the detestable country kirks, white-washed walls, unpainted decaying wooden seats, and earthen floors; the sermon was much better than I ex-

pected, and I got one new idea from it. We put a halfpenny each into fine tasselled black velvet bags, which supply the place of ladles, and came away.

"I had reserved all my energies for the Gaelic sermon in the afternoon, although I could not get the stupid people to understand how I, who could not understand Gaelic in conversation, could comprehend it preached. I did not think it worth while to enlighten them. As, in consequence of the lateness of the day when the Gaelic sermon commenced, had we stayed we should have had a very disagreeable walk back in the evening, I did not go, and so missed all the edification which should have ensued from the Highland discourse. I had, however, a very edifying conversation in the evening with one of the Arran women concerning adders, to see one of which alive was a most eager wish of mine. The principal facts concerning their natural history were that they could draw birds out of the air; that if they tasted bread they grew to an enormous size; and she assured me that when the people were eating bread out of doors, they were very careful to allow none of the crumbs to fall, for fear the adders should eat them, and be converted into boa constrictors. If one of the said adders bites any person, it immediately runs to the nearest water, and the person bitten must immediately run also; if he gets first, the wound will not be dangerous, but if the adder reaches the water before him, he must make up his mind for a great deal of suffering. A silken bandage tied round the bitten limb cures it, but cotton or linen is useless. I questioned this in the woman's presence, telling her I had no doubt a ligature tightly tied would be very useful in preventing the poison passing into the blood, but that it would be exceedingly foolish to allow a sufferer to wait till silk had been got when a common garter would suffice. She got very angry, and my crime was consummated when I asked her what they were fed upon; she asked me if I read the Bible, and told me I would find it there. I in vain tried to recollect any passage telling the food of adders, till one of the bystanders suggested the curse put on the serpent, that he should 'lick the dust.' On attempting to question that way of reading the passage, so great grew her ire that I was fain to decamp from the anathemas which were unsparingly hurled at me.

"Mr. Campbell departed for Rothesay at five o'clock, by the steamboat. I hoped to have compassed the great object of all visitors to Arran, the ascent of Goat Fell; and a young, pretty, gazelle-eyed invalid, whose acquaintance I had made, was to have accompanied me on Monday forenoon; but her ruthless relatives unexpectedly demanded her return home on Monday, and I was left at six o'clock A.M., utterly alone. I was kept a prisoner all day, the rain falling in torrents. I earnestly requested something to read; they gave me two old newspapers. One of them was an 'Edinburgh Advertiser;' I read it through, every notice from beginning to end. I then took the other, a 'Glasgow Herald,' and quickly devoured it, and then my breakfast. For the rest of the day I walked about the room with my hands in my pockets, repeating all the scraps of poetry I could think of. Most gladly did I hail the arrival of the Ardrossan steamboat; and who do you think I met in it, fortunate that I am? I by the merest accident found myself in the company of the celebrated traveller in Palestine, Rae Wilson. We had a long conversation. He gave me several tracts on cruelty to animals, and the like, and I got a scrap of his writing too. I was very much amused to see him 'licking,' as he called it, some noisy pigs in the vessel who disturbed us. This is my last letter. In two days I shall be in Greenock, and in two days more you shall see your affectionate son, GEORGE."

Returning to work, he entered on the last year of his medical studies in November. His apprenticeship in the Infirmary having now ended, much to the regret of nurses and patients, the needful time for study was more attainable, but many of the classes and duties were uninteresting to him. "I can testify from experience," he says, referring to Edward Forbes' disinclination to go up for examination, "they form an irksome burden to such as only desire to make medicine a door of entrance to the prosecution of the physical sciences."[1]

The classes of this closing session were, Professors Jameson on Natural History; Alison on Clinical Medicine; Hamilton on Midwifery; and Mr. Kenneth Kemp's Practical Chemistry;

[1] 'Life of Edward Forbes,' chap. v.

besides attendance in the Hospital wards. The first, but especially the last named of these classes, would go far to make the rest palatable. In his Life of Dr. Reid, Mr. Kemp is gratefully mentioned. "I cannot name Mr. Kemp without a passing tribute to the memory of that highly-gifted chemist, who, like his friend, to whom this volume is specially devoted, was too soon cut off by a lingering and painful illness. Mr. Kemp, who was almost entirely self-taught, united, in a rare degree, originality, ingenuity, and inventiveness, with constructive skill and manipulative dexterity. Had his erudition been equal to his qualifications in these respects, or had he prosecuted to a close the many novel trains of research which he opened up, or had he only published the many remarkable discoveries which he made, he would have occupied the highest place among our electricians and chemists. He could scarcely, however, be persuaded to use the pen, so that not a tithe of what he observed was put on permanent record, and his name in consequence 'is writ in water.' He did much, however—much more, indeed, than I believe is generally suspected—to foster the study of chemistry in Edinburgh; and many of his pupils retain, like myself, a very grateful remembrance of their obligations to him as a teacher."[1]

Among the many societies connected with the University of which George Wilson was a member, was the Diagnostic, though in its proceedings he never took an active share. Allusion to it is made by him in the account of academic student life in the Memoir of Edward Forbes. "It fell to my own lot about this time, as the solitary medical student in the University Diagnostic Society, to defend the Anatomy Bill at one of its meetings; but I cannot remember whether the Ayes or Noes had it. Nor was it matter of half so much concern to the combatants which side was victorious by number, as which was most skilful in fence. He would have been counted a very unworthy member who could not, on due notice, take either side on this or any other topic; and it must not be held as implying indifference to truth, that to make a good speech was considered much more important than to win a verdict. The debates were

[1] 'Life of Dr. John Reid,' p. 47.

gymnastic exercises. The members were training themselves for the bar, the pulpit, or the academic chair, if haply they might reach one or other of these high places, and could not always be discussing, 'Was Charles I. a martyr?' A novel topic was welcome to all classes of students, and it was discussed by them in a novel fashion."[1]

In summer the botanical class was resumed, but no special record of the earlier months of the session remains. In July, he says in a letter to his sister Mary, "My iodine inquiry is finished, although not half so satisfactory as I hoped or expected it to have been, and indeed so unsatisfactory that I declined giving Dr. Cogswell any report on the subject: he however insisted, and I have given him a paper which will be printed in a day or two.[2] Meanwhile, till I am surgeon, I have forsworn chemistry, got my window and drawers'-head purified, which they will remain till some new project enters or rather leaves my head; for there are plenty in it awaiting only for time to develop themselves, and I hope with more success than the iodine." In the following month the journal once more tells a little, though only one extract will be made.

"*August 25th*, 1837.—I have not written anything in this tome for a very long time; in truth, I have been far too busy thinking and working to have time to record either my thoughts or my works; and it is only because this evening I feel too much exhausted from bodily fatigue for anything else, that I have taken up this, and it is but to record feelings already sufficiently imprinted in this book. Since I poured out my feelings on this subject, my faculties have acquired a firmer and healthier tone, my energies have been directed to the zealous study of the physical sciences, and, above all, chemistry, in which I hope to distinguish myself, and my harassing connexion with the Infirmary has long since ceased. I have enlarged the circle of my acquaintance, and made some kind new friends, the Misses S——, kind, simple, artless, obliging. I hope for much pleasure from this society." Allusions to other ladies follow,

[1] 'Life of Edward Forbes,' chap. iv.

[2] See 'Prize Essay on Iodine,' by Dr. Cogswell, in the Appendix of which the paper referred to appears with the title, 'On the Decomposition of Water by Iodine.'

whose accomplishments added much to the enjoyments of his leisure hours. His passionate love of music made it a delight to see the exquisite pleasure their performances gave to him. His manner to ladies whom he respected was peculiarly fascinating, and he was a very general favourite with them. Music seemed a necessity of his life; even the acquirements of his younger sister, then a school-girl, were daily called into requisition, and the interval between dinner and tea thus filled up. He expresses the influence it exercised over him to his sister Mary in a letter:—"I know this, that I cannot by any word I could learn from others, or by one of my own coining, or by any form or number of words, tell of the passionate love for music I have."

In the autumn of this year the family circle lost two of its members by his cousin John Russell's marriage, and subsequent departure for Australia, and his brother Daniel's settlement in London. The loss of the brother who had been his daily companion for so long a time, was keenly felt by George. Their intercourse had been more like that of lovers than any other. Community alike of goods and thoughts had been theirs, and henceforward George, with his usual self-forgetfulness, tried to contribute to the happiness of the absent one, in making letters do their best to compensate for the pleasures of confidential converse. To this we owe an abundant store of letters, not such as the penny-postage has introduced, but long, well-filled sheets of foolscap, written within and without.

Before this parting occurred, the examination for the College of Surgeons' Degree was passed. Here is its announcement to Daniel, who was then from home on a visit:—

"*6th September* 1837.

"MINE GOOD BROTHER AND FRIEND,—Give me hold of your right hand; there, shake it right stoutly, and congratulate me on having passed Surgeons' Hall. Ah! ha! ha! it is but two hours since the memorable metamorphosis took place, and here I am ready not merely to perform all kinds of bloody operations, which is small matter, seeing diplomaless folks can haggle wonderfully well, but ready, prepared, and resolved to take *fees*.

and be independent of the subsidies of any one. I took good care none of the good folks at home should know aught about it. I completely blinded them, and the more so, that in a walk last night with Catherine and Mary, I took care to talk as much nonsense as possible, imagining that such a careless, thoughtless-like piece of policy would completely mislead them as to my intentions. To atone for it, however, I had to sit up till one, spelling over all the mysteries of bones, muscles, nerves, etc.; and all next (that is, this) day, I have been busy reading over half a book of chemistry, and the whole anatomy of the leg and arm, from the shoulder and haunch to the fingers and toes; and well it was I did so, seeing I was examined on the arm, and I was all the more expert at answers from having looked over it. At the eventful hour of half-past one, having slipped out in my best coat and waistcoat, and taken your cane, that I might delude any of my friends with the idea I was about to wander out on a walk, carelessly looking into the jewellers' or toy shops when any one passed even on the other side, who I thought might recognise by my dress my intentions, all the while swinging your wonderful stick with as much composure as possible, though I believe it kept pretty good time with my heart thumping on my ribs, so much indeed, that 'thinks I to myself,' I'm in love—with what, I leave you to guess, being one of those courteous writers who don't insult their readers by explaining everything, as if they were addressing children.

"I was ushered into the waiting-room, a little plain room, which contained two fellows sitting in the window, and putting on a very big magnanimous look, I strolled down to a seat, on which planting myself, I kept stedfastly looking at them, that they might not look at me, a plan which succeeds as well with men as lions (see African travels). At last, however, tiring of staring, I fumbled in my pocket to see if I had any sort of book to while away the time. I dragged out of the recesses of my pocket Mr. Williamson's French Prayer-book, and for want of better, fell to reading Epistles, Collects, Prayers, and Psalms, all very much to my edification no doubt. At last, saturated with theology, the clock having struck two, I returned the book to

its cell, and pulling off my gloves, laid them, hat and cane, aside. I now learned that one of the gentlemen at the window had passed the day before, and that one (comforting thought) had been rejected; and I was awaked out of a chirurgical reverie by the other fellow singing out, 'Have you any tremors?' 'No,' said I, and thrust my head up against the wall, and planted my feet firmly on the floor, that the said tremors might not appear. They were two good-natured fellows, and were busy telling me to answer as quickly as possible, lest they should hear too distinctly. Hem! thought I, and the bell rang, and in I was ushered to the grandees, whole four inquisitors. There they fell to; shoved me Gregory, made me translate, twice write a prescription, tell them as much about drugs and chemistry as would fill a pharmacopœia, and so much about the anatomy of the arm, skull, neck, etc., the surgery of the same part, and the philosophy of broken skulls, and the method of coopering such casks, that I might rival Syme, Liston, or Lizars. 'You may depart, sir,' said the President. I was kept for a moment in a small side-room, and then pulled in to be told, 'that my examination was highly creditable to me, and that they were very much pleased.'—Rejoiced in heart, here I am, your affectionate brother, GEORGE."

To his cousin James, also from home at that time, he gives the same news, with some interesting additions. James Russell, four years his junior, had distinguished himself at the High School, and given proofs of the genius which was afterwards developed with great promise. The brotherly love and companionship between him and George, so tender and true through many years, was now beginning to be established.

"*September* 9, 1837.

"MY DEAR COUSIN,—I am breaking through the acknowledged rules of epistolary correspondence in writing, for all learned judges of such matters teach, that he who departeth from home to sojourn in a foreign land oweth the first letter to those at home; for the most cogent of all reasoning, that he who is left at home has but the accustomed round of everyday duties,

amusements, and pleasures to discourse upon; whereas he, the vagabond, has travelled by land and sea, has voyaged on the great deep, and been a peripatetic on the solid earth, and visited a strange town, and seen many new sights, and made new companions, and, in short, has entered into a new circle of folks, things, and circumstances, which should yield to an inquiring mind, a watchful eye, an eager attention, and a prying spirit, the elements of many a joke, and many a story and circumstance; so that I shall hold you in the highest degree culpable, if you do not afford me a rich, well seasoned dish, compounded 'de omnibus rebus et quibusdam aliis.'

"Yet although I plead the excuse of travelling in the same home circle, like the mill-horse, and therefore in sight of a horizon whose every prominent object has already been often scanned, yet, in truth, one little change has passed over my outward circumstances and inward feelings, sufficiently important to deserve a short notice in this my epistle. On the 8th day of September, which was last Wednesday, I, your most worthy cousin, appeared before that dreadful, inquisitorial tribunal, the College of Surgeons, and having been duly examined, sounded, and tried as to my proficiency in the arts of medicament-compounding, limb-dissecting, and wound-curing, was duly declared, pronounced, and registered as one in every respect fitted to bear the honourable title of Chirurgeon, commonly called Surgeon. I found the tribunal of a far less terrible cast and character than I at all anticipated; in truth, I should have faced it long, long ago had I dreamed it could have been half as easy. A little bit of Latin to read, which was soon despatched; a cough-mixture to prescribe, which was equally soon got over; and a volley of questions on all sorts of pharmaceutical and chemical subjects, followed up by a round of subtle interrogations on the mysteries of anatomy and the grave matters of surgery, and I was thrust into a little closet, to be immediately drawn out again, and told that my examinators were highly pleased with my appearance, and that my examination was highly creditable to me. And I, most highly pleased, scampered home to give the welcome and most unexpected news; for I had taken great care they should not have the dimmest notion of my intentions, and I had been

quite successful in the means I adopted for blinding them as to my real projects. I have, of course, tossed away to the furthest and most dusty corner of my room those grim and unwelcome volumes, which I had too long been under the necessity of brooding over, till I could have found in the dark the passages referring to the various unwelcome topics.

"Now that I am released, I shall turn to more congenial topics, more especially to my beloved chemistry, in which I hope and trust to make a figure; and I have some leeway to make up in literature, both ancient and modern, which I trust I shall be able to compass.

"I have heard with pleasure of your having taken with you your classic works. They cannot fail often greatly to interest at times, when weather and other contingencies prevent you enjoying those delights which are more properly rural; for in spite of all poets, novelists, and romancers delight to sing of concerning the pure, holy, delightful, and inspiriting beauties and pleasures of the country; and though most merchants, tied down from day to day to their mercantile pursuits, love to 'babble about green fields,' and to sigh for running brooks, and secluded glens, and romantic dells, and cloud capt mountains, and clear pellucid lakes, and frowning cliffs, and gloomy precipices, and all the other romantic, picturesque, and exquisite pleasures of the country,—yet it is very possible, as I believe must be the confession of every one who has often spent a week or two in the country, to spend a most stale, flat, and unprofitable day, in spite of all the elements of the sublime being within sight and easily accessible.

"In truth, we are a most discontented race of shuttle-cocks, who are unhappy with staying here or there, mountain or valley, hill or dale, river or lake, town or country, but must be driven about, now east, now west, now north, now south, in a restless, wandering mood, which is ever thirsting after some unattainable good, some unrealizable project. The temple of Aladdin was bereft of all pleasure in his eyes, although built of the most gorgeous materials, gold, silver, and precious stones, ivory, ebony, and scented woods (for the full inventory of which see the 'Arabian Nights Entertainments') because it lacked the roc's egg, which it was thought would be the crowning pinnacle

of glory and perfection; and Haman thought his pleasure incomplete because Mordecai hung not on gallows thirty feet high, and Alexander found this round, spacious globe far too little for him. That was Alexander the Great: what says Alexander the Little? I daresay he finds room enough to move about in Stirling. Give my best wishes and hopes for his happiness, comfort, and renown, and for yourself, be sure you read your classic books. I left the High School just when I was becoming alive to the beauties of what had formerly been looked on merely as tasks. You have been more fortunate, and you ought not to lose your opportunity. As it is, I find much delight in Cicero, Lucretius, Seneca, and in a modern writer, Sir T. Browne; but you are a far better classic than I am, and must find far greater delight in having a more extensive and varied round of pleasures than I can at all command.

"Although I have been gravely proving the country not Paradise itself, yet I may be soon there myself. Perhaps you shall see me at Stirling in a week or so, on my way to Callander. I am not sure, however. Write soon; see you address to G. Wilson, Esq., Surgeon, or the other George Wilson will get the letter.—And believe me, your affectionate cousin."

The journal will be allowed to speak for itself before we pass to a new epoch of life, bidding farewell to scenes wherein the nucleus of all future greatness has been year by year forming itself. "The tastes of most men can be traced back to the habits of their youth, and their habits are, in a great measure, moulded by the circumstances, physical as well as intellectual, in which that youth has been passed. . . . The youth whose hours of relaxation are spent in the presence of those magnificent prospects so rife and many around us, carries with him in after-life the memory of their beauty and grandeur." So said Edward Forbes, in his Inaugural Lecture on entering his Professorship in the Edinburgh University; and as twin-stars revolving around each other, alternately coming forth in brightness, he and George Wilson have in this chapter thrown light on each other. Once more we borrow words that are wonderfully appropriate to both of them: "The dew of his youth was

still upon him. The corrupting breath of the world had not tainted his freshness, or its cold touch chilled him. His eager eyes looked forth on a rich and boundless future. Young men of genius and tastes like his own had become his attached friends. Seniors of the highest repute welcomed him as a pupil. Libraries and museums of the greatest value were open to him daily. His shortest walks were through the streets of a city which delighted his artist-eye, and had a strange fascination for him."[1]

"*September 19th*, 1837.—I have entered on the third week since I passed the portal of Surgeons' Hall, and am long tired of my dignity, if, in truth, I ever esteemed it one, which I never much did. In my sight it was rather an ordeal to be undergone than a triumph to be achieved, and I looked forward to it for a long time with a feeling of carelessness, which prevented me from seriously preparing for it; and in addition, through the bygone summer, I was so thoroughly occupied with chemical speculations, that anything in the shape of anatomy or surgery filled me with disgust. If anybody gave the degree of chemist I would not mind how stiff an examination I got, and proud I certainly should be of such a title. As it was, I had resolved, if rejected, for ever to give up the notion of Surgeons' Hall, and I believe my friends would have striven in vain to have induced a second trial, although by such refusal I should certainly have deprived myself of a very beautiful patent lever, jewelled and caped silver watch, which my good, kind uncle Peter had in reserve for me. Fortunately I passed without any difficulty, in truth I may say with flying colours, for I only missed a few trivial questions, and they made me a flattering speech, when I was dubbed surgeon. In short, I found it a great deal easier than I at all anticipated; yet I never felt more distrust in my own powers, more want of confidence in my abilities, than just before I stepped into the examining chambers. I felt a strong wish to walk home and give up the idea of confronting them, and the great probability of rejection for a thousand reasons arose before my anxious and troubled mind. The inordinate

[1] 'Life of Edward Forbes,' chap. iv.

palpitation of my heart, which up to the moment of my entering the room had troubled me exceedingly, ceased as soon as the first question was asked, and I was calm and collected throughout the whole scene; so let it pass. It has at least, I think, given me a clearer view of the sad state of feelings which a dying man may be believed to have, especially one who has to prepare for eternity. The fond hope, the eagerly entertained expectation, the gloomy doubt, the oppressive despondence, commingling in the mind, and shifting its purposes in the most fantastic, lawless, and painful fashion, were, I doubt not, the very same in kind as those which the anticipation of immediate dissolution must produce, though, of course, greatly different in degree. I felt that abandoning of the mind to one subject, that thorough occupation of it by the one engrossing idea, which has been so beautifully described by J. B. Patterson as the characteristic of the dying, even when they appear most delighted with the attention of their friendly ministrants. I wish to express what I am afraid I have not done sufficiently, that I conceive the doubts of fitness to undergo an examination are exactly of a kind with the dread of an insufficiency of preparation for the tribunal of the Almighty, which haunts the mind of the most holy and Christian saint."

"*September 20th.*—I am not in a scribbling humour to-night at all, but anxious to write down a thought or two before going off to the country, so as to leave a clear way for marking down whatsoever of interest may happen there. . . . Monday, saw some good ladies at tea with us, and, fortunately, thanks to a long post-prandial walk, I was merry and frolicsome. I greatly edified Miss B. by proving how many quaint and passed-over virtues repose in the folds of a brown coat. She answered me gravely in my own fashion, but soon gave in, in a fit of gleesome laughter. What I said of the coat I cannot now remember. I never can remember what I have said when I ruminate over a night of fun and folly, and as for sitting to coin, or gravely to rehearse a joke, I never dreamed of it. Anything of that kind is with me the unbidden impulse of the moment. Yet I feel the love of the thing, and the power of excelling daily increasing, and I don't see any good reason for nipping it in the

CHAPTER III.

A YEAR OF STUDENT LIFE IN EDINBURGH.

'The pleasure and delight of knowledge and learning, it far surpasseth all other in nature.'—Bacon's 'Advancement of Learning.'

A letter to Dr. Niven, his friend and companion alike in school and college life, gives particulars as to the purposed relaxation from labour mentioned in the close of last chapter. Ten days only were available, as his connexion with Dr. Christison's laboratory, as assistant, was about to begin. That the most was made of those few holidays, will be evident from the notice of the excursion in letters which follow, and speak for themselves:—

To John Niven, Esq., Willow Grove.

"*September* 20, 1838.[1]

"My dear Friend,—I very much regretted my being out on the evening you called before you went to the Highlands. In truth, I am so seldom out at untimeous hours, that I do feel annoyed when a chance call finds me out wandering; and I should have called the next day to testify my anxiety to wish you well in your northern journey, had not all my doubts, and dreads and fears been occupied with the approaching horrors of Chirurgeons' Hall. In truth, I made no visits anywhere, dreading to be asked anything about the unwelcome subject. Now, however, I am relieved from all apprehension, 'from the consummation so devoutly to be wished' having left me learned

[1] The date of this letter ought to be 1837, as the facts it contains show. Mistakes as to the year are of very frequent occurrence in early letters, characteristic of the rashness for numbers in George Wilson. When there is no doubt as to the correct date, it will henceforth be altered without referring to the blunder.

and gifted in *diplomacy* (forgive the pun); and I should have been delighted to have accepted your kind invitation to Penicuik, where I know I should have been very happy. A splendid equestrian I doubt not I should have become, under the fostering care of you for my Ducrow, and though I might not have learned to stand on my head on the saddle, or play a somersault over a horse's back, or drive four horses in hand *à la courier*, yet I think you might have turned me out, albeit little versed in the mysteries of horse-flesh or the delights of the saddle, at least fitted to trot gaily, perhaps to canter, assuredly to gallop; and your uncle, too, I am sure, would have been kind and obliging, and I should have relished the place, society, and country abundantly, had it been in my power to accept your kind invitation. I have been most earnestly invited, however, by friends in Stirling, Callander, and Glasgow, to visit them, and I propose setting off to-morrow for Stirling, then to Callander, Loch Katrine, Loch Lomond, etc. I am fortunate in having friends in all these places, and I am the more anxious to set off immediately, as I must be home by the first of October to begin with Christison at his laboratory; and I have, in addition, some most important projects of my own, which in truth cannot well stand over longer, for I must look forward to the next winter as a very busy one. I had hoped to have had Mr. Williamson with me, but being now completely enrolled as clerk in the Infirmary, Mr. Lizars won't let him go, at least he strongly advises him to stay at home; for it would appear that he got his situation with some difficulty, and had better not be very ready making requests till he has been longer in office. So I shall be deprived of his most pleasant society, and shall not enjoy my journey half so much as I should do had I the company of my *ci-devant* fellow-apprentice, whose merry, happy joyousness would much have beguiled the weary minutes, which more or less beset even the most delightful journey, and which I cannot expect any more than most other folks to avoid. . . . Now, though I cannot have the pleasure of accompanying you this autumn, I may perhaps find you disengaged, and as willing to put yourself about for me next season. Honestly, nothing could delight me more, and nothing would delight my friends, espe-

cially my mother and sister, than my going Penicuik-ward and becoming a bit of a cavalier dragoon; and I shall feel sincerely glad of your company and friendship this winter, for I have just parted with my brother, who, having gone away to London to push his fortune as well as he can, has left us melancholy and disheartened, and me especially, who never loved any one so fondly as my brother, and will with difficulty find any one to supply his place or cheer my solitude. I propose, and I hope you will assist me in what I imagine will excite in you as much mirth, though not perhaps as much indignation, as it did among my good sisters and mother, viz., to get a dog to be my companion, and in some degree break up the tiresome solitude of a study. It won't be to your liking, but I'm going to tax your friendship to get me none of your great, big, black-and-white Newfoundland dogs. My room is too small, and my tastes too domestic. What I should like to get hold of is a wiry, fierce, little terrier. I think I've got something of the terrier in my own perverse disposition, and I could love one and get on very nicely with it. I had the company of one for two years; a handsome, rough, little, rat and cat hating fellow, who showed great affection for me, which I did my best to reciprocate, till some wretched scoundrels about Silver Mills poisoned the poor animal, and 'I was left lamenting.' I can't get on studying alone; I must have some one beside me. Now, my sister can't come, for my cousin would be left companionless, and my two young sisters are inseparable, and a great old skull on my mantelpiece is not the most engaging of companions; and I think I should be greatly the better of Phantom, for such shall be his name, with whom I could amuse myself in my idle moments."

"GLASGOW, *Tuesday, Sept.* 26.

"MY DEAR MOTHER,—I sit down in a great hurry to write you a few lines before leaving Glasgow, although I trust the arrival of Mrs. Thomson has abundantly informed you of the manner in which I spent my time in Callander, so that I shall say nothing, as I might merely recount to you things already sufficiently well known. I started from Callander at five o'clock

on Monday morning, and, with the crescent moon for my only light, journeyed along, singing and musing and meditating. In an hour the first slant rays of the sun began to peep above the horizon, and I had the pleasure of seeing his illustrious majesty the sun rise in all his glory,—no small pleasure to me, who cannot recollect to have ever seen him before in similar circumstances. I arrived, after a most delightful walk, at the head of Loch Katrine, nothing doubting that I should find a boat ready to receive me, and waft me along the lake, but although boats and oars lay about in abundance, there was no appearance of rowers. Imagining that the boat had already gone, although I was quite in time, I walked along the banks of the lake, hoping to make up to them if passed, and to be taken up if they came after. As it afterwards appeared, they sailed after me, and I saw them slowly sailing up the loch, but though I halloed and shouted, and waved my handkerchief, they either would not or could not hear me, and I had to tramp on along the sides, which as they form every here and there wide bays, make the land journey much longer than the way by water. I pushed on, however, at a rapid pace, keeping almost up to them, till I came to the last two miles, where I lost my way and wandered in a wood. Skirting the waters, having no notion at the time that I was wrong, I pushed on, though I saw no road, and after a very perplexing, weary journey, now clambering over rocks, now climbing over walls, now creeping through rough hedges and palings, often uncertain which was the right path, but, contriving to fall in with the footpath, without very much difficulty, I at last threaded my way, wearied out and exhausted, to the ferryman's house,—for the road runs along the east side of the loch, and you must cross to gain Lochlomond. Here I earnestly craved a drink of butter-milk, but the woman had none. She at once, however, sent out her pretty little girl to get water at my request, but, meanwhile, milked her cows, and brought me a bowl half full of milk and warm water, which I most greedily drank, and was thereby greatly refreshed; in truth, it was no doubt the best thing I could have taken; and when, in answer to some inquisitive questions of her fine manly husband, I said I was a surgeon, she so simply said, 'And to think that I should

be giving you advice!' I assured her I knew them as being very *skilly* folks, and that I was half a Highlander myself, and I at once craved her husband to sing me a Gaelic song. While crossing, he told me he 'couldna sing' unless he 'had a glass o' whisky;' but as I had every reason to believe there was none in the loch, my only accessible place for liquors, I had no means of making him musical; and so, with stories about Rob Roy, and jokes, and the like, we sat and talked while he rowed me across. I had still five miles to walk, which was no cheering prospect to me, who had already walked twenty-three; and, in spite of my invigorating drink of warm milk, I crept very laggingly on. The road was a dull, sterile, rugged thing, only, every now and then, I saw the party which had passed up the loch, moving with ponies. I should have been very glad to have made up to them, and should certainly have treated myself to a pony's back had I reached them. At last, jaded and exhausted, I arrived at the small clachan of Inversnaid. After resting, I took off my collar and washed my face and hands in the cooling waters of Lochlomond, along whose surface I very speedily was moving in a comfortable little steamer. I was much too weary to enjoy it as I should have done, had I been refreshed; but it is truly a magnificent (that's the word) loch, especially at the west end, where I was greatly delighted with the fairy-like appearance of the scattered islands. We make a work about our Arthur Seat and Calton Hill, and our Duddingston and Lochend,—the market here is quite glutted with them. You might tumble Ben-Ledi or Ben-Lomond and fill up half a dozen lochs, and the only effect would be to bring into view twice as many more of hills, lochs, straths, gulleys, peaks, and I know not what. I am just going off to Dunoon; and with the kindest love to all, I am, your affectionate son,

"GEORGE."

"To MISS MACKAY, GLASGOW.

October 6, 1837.

"MY DEAR MISS MACKAY,—Having finished the perusal of some tomes treating of certain recondite philosophical and literary subjects, I gladly sit down to dispel all your anxious fears

regarding my safe arrival from your most hospitable city. Some foolish people would at once have called for pen and paper, and before their boots were fairly pulled off, have indited a scanty unreadable scroll, purporting to tell that the steamboat had not blown up, nor its engine gone wrong, nor itself come in collision with another, nor the writer fallen overboard, etc. Then reverting to travels by land, the scrawl would go on to say, that the horses did not run off, nor the coach tumble over a cliff, nor the traces break, nor the wheels suffer any mishap, and so on. But I am far too much of a philosopher to write any such nonsense, nor am I about to bore you to death with a melancholy recital of my being almost frozen to an icicle, and nevertheless nearly tumbling off the coach with sleep. I have fortunately forgotten these trivial and temporary inconveniences, and the reminiscence of them would be of no possible use to either of us, so I meddle not with it any more. After the sobering influence had duly improved me, I set off on Monday morning to the College, and the first person I beheld was my most respected instructor, Dr. Christison. After shaking hands with the worthy professor, and making inquiries after his health, I whipped off my surtout, and on with my old coat,—I say my old coat, but it stands in the same relation to my back, that Elijah's mantle did to Elisha, being the legacy of a departed (to the Continent) friend,—and I fell to a very curious case of attempted poisoning, by putting vitriol in tea, in the analysis of which I occupied the whole of the first day. Since then I have been engaged up to the period when I write, with two delicate processes for the purification of Sulphuric Acid, one for the more accurate preparation of Tinctures of Barks, not to mention the analysis of Laudanum, and assistance in opening a box from Ceylon, containing roots, fruits, leaves, etc., from that most interesting place, sent by a lady for Dr. Christison's Museum.

"Situated as I am just now,—buried in the difficulties of several of the physical sciences, changing from pharmacy to chemistry, from chemistry to physiology, or taking a refreshment in the subtilties of logic, or the elegancies of rhetoric,—you must not expect my epistle to be very rich in what may

either amuse or instruct, the more so, that I have lost my brother, who sharpened every faculty as 'iron sharpeneth iron.' I have no one now to laugh and joke with; or, if a feeling of lonesomeness comes over me, and I cast my eyes round for a familiar countenance, they fall on a grim, grinning battered skull, surmounted by two cross-bones, the adornments of my mantelpiece. Nevertheless, I am not to be outdone in grinning by a skull, and when any odd idea comes from the caverns of my restless head, I grin and show my teeth, and a great many more too, in a far more joyous fashion than the said lifeless cranium can do.

"Whatever the reason, medical men are never more at fault than in reasoning on their own disorders. I seem to have bid good-bye to a considerable portion of my senses, not to talk of bottles, messages, appointments, and articles of dress, forgotten, misapplied, or neglected; of a letter put into the post-office marked paid, thrust into the common receiving aperture, and safely lodged at the bottom, before I remembered that I had written in great characters the 'paid' so cheering to the receiver, but in this case, destined only to raise the compassion, or awake the indignation of the young lady, its recipient, at the melancholy poverty of the writer. . . . .

"Now I think I know the reason of all this mental absence, and as you are a discreet young lady, I shall not scruple in confidence to tell you. I am over head and ears in love, and the object of my attachment so thoroughly engrosses my thoughts, that I have scarce a speculation to give to anything else, and though I have wooed her steadfastly, she, with the coyness and fickleness of her sex, gives me but doubtful signs of a reciprocity of affection, and I feel that I make but small progress in her esteem; and eager as I am to ingratiate myself with her, and high as I should esteem the honour of having a most thorough acquaintance with her, I know that many of my friends would imagine her a very unfit companion, and I can conceive you saying that although a lady might occasionally converse with her, a familiar intimacy would be most undesirable, and I believe you to have more than common charity in such a case as this. Nevertheless, she is descended from a noble and influ-

ential family of very ancient origin, which can show incontestable proofs of having flourished in the dark ages, under another title, and which received great additions to its power and influence, under the reigns of Elizabeth and James I., under the Chancellorship of Lord Bacon. If you wish to see the birth, descent, and fortunes of the family, I would refer you not to Burke's Peerage, but to the Encyclopædia, where, under the article 'Sciences,' you will find a minute history of the family; and if you ask me which of the daughters has awakened in me such admiration, I reply, the 'Right noble the Science of Chemistry,' who in my eyes is by far the most attractive and interesting of the family. In case a kindly feeling to the writer should incline you to know more of this noble house, and its collateral branches, I would refer you to a work written by a lady, deeply versed in this branch of Heraldry, Mrs. Somerville's 'Connexion of the Physical Sciences.'"

We shall now be greatly indebted to the series of letters, addressed to his brother, just settled in London, for information as to his employments and aspirations. Speaking of this correspondence, Daniel says:—"London, to one crossing the Border for the first time, had perhaps greater novelties then even than New York or Washington at a later date, and some of the allusions in one of his first letters are in reply to an account of its marvels. Amongst these, one of the oddest, to my unpractised eyes, was the public display of the undertakers' establishments, with miniature coffins and all the paraphernalia of death, so totally unknown in Edinburgh, where, excepting an ambiguous sign-board, labelled 'Upholsterer and Undertaker,' there is nothing to indicate the fact that the last sad rites supply a profitable trade to the craft of undertakers. In total contradistinction to any such decorous euphemism, the London tradesman engraves a couple of coffins on his card, and presents it to you with a courtesy that clearly says how happy he will be to find you speedily requiring his services; and in full accordance with this he paints boldly on his signboard, 'Funerals performed!'" To a description of these and other London wonders, George thus replies, with a running pun on the names of two London

publishers, with whom his correspondent had then some transactions:—

"MY DEAR DANIEL,—I had just awaked from a tolerably sound and refreshing sleep, at the excellent and philosophic hour of half-past seven, when in bounced into my room, mother, holding in her hand an opened letter, assuring me she had but read one sentence. She proceeded to go over it again for my satisfaction. I, still rubbing my eyes, and not very sure where I was, patiently ensconced behind my curtains, sat trying to collect my scattered ideas, and make out what mother and you would be after, (those horrid steel pens, I could not write a kind letter with them!) till my attentive ear felt the word 'Moon,' which, coupled with the circumstance of my having watched an eclipse of the said luminary the evening before, and joined to the fondly-cherished belief that the word *struck* had been kindly passed over by mother, explained the whole mystery. Your conduct in the omnibus, which you so unblushingly relate, justified my fear of your being moon-struck, and I needed only to read your cautions against communicating the news to feel satisfied. There is no surer proof of lunacy than suspicions entertained of intimate friends. My only consolation and comfort is that it was into the power of the *moon*, and not that of the *graves*, that you had fallen; an accident which the treatise on coffin-making in your last epistle to me made me dread had befallen you. By the by, what a very odd and amusing thing, of a sort, would the entry-book of one of these London *performers* be. You can imagine some scamp who had spent his time in kicking his heels in the air, like the donkeys, leaving in his will, 'Item, that my coffin be made roomy at the heel end;' or a gouty old gentleman, who felt very doubtful how he should reach the Styx without *his* sticks, and feeling also convinced that in case of old Charon getting surly, and 'couping' the boat, the said stilts would be of great use, might append a codicil addressed to the undertaker, 'Item, that room be left for my crutches;' and as for those unfortunate beings whom [illegible] used to characterize by his strangely expressive phrase as able to act Richard III without stuffing I know what they would do, perhaps, 'Wanted an Italian S coffin, to be

made roomy at the bends. . . .' My dear brother, we are most heartily delighted at your success, in every way so far superior to what we could have expected, and I do congratulate you most sincerely, and with a lightness of heart which I have not known since you left, and which is my only apology for the nonsense I may write or have written. . . . Let us return to more trivial things, and first to the exploits of others, and then of myself; for I am going in my yepistles to cater from all sources for news for you. Well, on the sixth, my friend John Niven was safely delivered of a right good pun, and both child and parent are doing very well, and as I was present at the *accouchement*, you may feel interested in the detail of facts. I was dining with his uncle, who told us a grave, sober piece of nonsense, believed by him, however, about the Countess of Mar having had a number of children born blind, a mischance which no one could understand or explain, till an old spaewife, who called at the door, referred it to a great stone statue of some heathen god standing in the park, which the Countess greatly admired, and whose great convex pupilless eye-balls the old crone said were the sympathetic cause of the children's blindness. The statue was removed, and the next child could see. Now, said the uncle, turning to us, what can you doctors say to that? 'Why,' says John, gravely pulling up the corners of his mouth, 'there is no mystery in it at all; the children were stone blind.'"

"18*th October* 1837.

"MY DEAR DANIEL,—Though you can scarcely have digested the contents of my last epistle to you, I make no excuse for again writing,—the more so that I forgot a great many things in my last, which I hope to be able, like Campbell, to 'squeeze into' this; and, in addition, I have been mainly prompted to write at this short interval that I might tell you what, if left for a longer time untold, might from passing occurrences become historical events, and pass out of the jurisdiction of the letter-writer. . . .

"Jessie has been rather complaining for a few days back, and yesterday became so feverish that we called in the doctor. It

London. Well, this parenthesis, worthy of Knickerbocker, purporteth to let you know that, till orders to the contrary arrive, I shall write as I have written and spoken. . . .

"I have no time to tell you how busy I am with Christison all day, and chemistry and physiology all night. . . . I need not tell you, 'I'm lonesome without thee, my own dear br'—other. —Your affectionate GEORGE."

Two days later than the preceding letter is the last entry for the year in the journal :—

"*Saturday, October 20th.*—I was agreeably surprised on coming home to-day to find a parcel awaiting me, addressed in a very pretty lady's hand, and, as it was easy to know, from Miss ——. I opened it with great glee, expecting an answer to a very odd, whimsical letter sent to thank her for a present of bottles ; but how amazed and aghast was I to find in it that my poor friend, Samuel Brown, had been seized with fever the day he should have left for Berlin, and that 'accounts are very unfavourable indeed.' Poor fellow ! I don't know what I should do if I lost him, almost the only friend I have except my brother ; gained as a friend, though an acquaintance before, at a time when returning health and energy had sent me to the careful study of the physical sciences. I was delighted to meet him, and to meet one who so fervently reciprocated an enthusiastic love for such pursuits. The gaining of such a friend was a stimulus to more active study, and a most potent motive to steady perseverance, and many a day-dream of the future, and many an air-built castle had him for its hero. And now, when I every day expected a letter from him, to be stunned and startled by such terrible news ! I prayed to God for him every night, and perhaps God was beneficially watching over him, and preventing his reaching Berlin, where cholera is very bad. It has quite unsettled me ; the idea of studying—what I thought to have done—chemistry this evening seems cruel, while a brother-chemist is lying in the fangs of fever. I cannot open my books, and instead am in a listless, melancholy mood of mind. Troubles have come thick on me : my brother gone to London to buffet with the distractions of that great city, my

[illegible] my friend Brown [illegible] and poor Bobbie [an artist friend] [illegible] I have been out at [illegible] and [illegible] a mirth I did not feel, [illegible] raising his spirits above their former most [illegible] state, without in any degree swerving from the truth. [illegible] to my sister I can be of little use, and to my brother and [illegible] I am but an anxious, passive, not even [illegible] listener, depending on letters for [illegible] of [illegible] my sorrows. I don't much crave [illegible] and in other Daniel would suffice of my own [illegible] but it's a terribly awkward way of [illegible] the post. I would I had one dear [illegible] beside me in correspondence, but I am denied [illegible] and must even feed as best I can, on my [illegible] of friends of either sex I have scarcely any to [illegible] with me. What poor —— will do, I don't know; [illegible] a most melancholy situation, suspense is so agonizing; [illegible] and the risk of infection makes it impossible for my sister Mary to call there. The fortnight that's to elapse [illegible] more news come, how wearisome and long to all of us! Could it but be annihilated! I shall exist in most troubled suspense."

Ten days later he informs Daniel of home affairs :—

"Lest you should entertain groundless apprehensions regarding your sister's health, and magnify her ailments, I, at this early period after the receipt of your most kind and acceptable epistle, sit down to write you; allow me to give you the consoling intelligence, that Jessie is declared convalescent, and freed from all the restrictions of an invalid. She is now engaged, after the approved mode of all convalescents, in speculating after the finishing of one meal what shall be the character and quantity of the next: already has she so much progressed, as to have made great havoc in the corner of a beefsteak, not to talk of eggs, calf-foot jelly, grapes, plums, and other such trifles, which are despatched without so much as 'by your leave.' The periods between meals she enlivens, after the equally orthodox

fashion of recovering sick-folks, in listening to odd tales and fantastic anecdotes: the great demand is for 'funny stories,' and such a thing as drugging the market is quite impossible, so great is the consumption of the article in question. She has already digested a great portion of the celebrated story of Rory O'More, with the top-boots, the illigant stick and the gridiron; has devoured piecemeal Croker's Legends of Ireland, and having her eyes now open, she has been able, in addition to hearing the inimitable story of your namesake, O'Rourke, to feast her eyes with a sight of the sketch taken from life, of ''pon the honour of a gintleman,' and the stone sinking in the bog. This evening has seen Mary and me relieving each other (like shipwrecked passengers at the pumps) in instilling into her the wholesome precepts of Mansie Wauch, and as a further proof of her being on the high road to complete recovery, though yet very weak, and unable to do more than half sit up in bed, she and I sing together the 'Angel's Whisper,' the 'Mistletoe Bough,' and the 'Fairy's Song,' every verse with great *éclat* and mutual congratulation. Before I close the letter I shall have a message from herself, but just now she is sleeping, so I for the present close my duties as Secretary for the Home Department.

"Lest you should throw back in my teeth some of my grumblings, let me tell you something about my own doings. Well, you will be delighted to hear that I have made great progress in the—honing of razors. Excuse the vanity that dictated that last sentence, while I proceed to tell you what alterations have been effected in my studio, that you may be able to realize the idea of myself sitting in the ancient morning gown. Well, there are no wooden or brick partitions built up; it has four walls, one window, two hat pegs, two doors, one *museum* (see you pronounce that rightly); and in addition to all that, your *protégé*, the muse's son, M'Donald, brought me over, the night you sailed, an oil painting of the Dutch surgeon, and his patient squealing before the knife touched him,—a fine spirited thing. Dobbie is greatly pleased with it, and I have got the young fellow engaged to paint me a partner for it, in the shape of an old grave grey-headed and bearded alchymist, puffing his furnace among fantastic vessels, so that, as the one points to a surgeon's room, the

other may point to a chemist's. In addition, generous Mr. Dobbie has given me a dog's skull to match the leopard's, a cast of the sheep and bull's head from Trajan's column, and two heads from the same, so that when they are hung, one on either side of the cattle, my two pictures farther out, my skulls, and two or three busts, on the mantelpiece, interspersed among crystals and alchemical-looking bottles, in a mission for the obtaining of which, I am about to set off to the Cowgate, I shall boast of having a unique room for my study. I have another object in making it neat. You know I proposed beginning a set of demonstrations on chemistry this winter; well, I did begin, though I got no time to tell you, Jessie's illness permitting me only to give one, which was attended by all the Misses L. and Mrs. L., Mr. L. being prevented by necessitous calls on his attention. These, added to the family, made a goodly audience, and I am promised Miss Gibson and Miss Blackwood, not to mention others. I created quite a sensation with my first prelection, Mrs. L. wondering if I would print it! and with Mr. Macgillivray's assistance, we made a splendid enough show of experiments, only a few of the more trivial ones failing. B—— took notes. Jessie's illness drove the idea out of my head. Now that she is fast recovering, I shall begin to get my bottles in order anew, but a gloom is cast over my chemical speculations, by the knowledge of poor Samuel Brown's illness. I feel it in the light of a piece of hard-heartedness, to be thinking of such matters when he is lying ill; but it would appear it is a nervous fever which very rarely is fatal, so I augur the best. But to wait a whole fortnight in restless suspense is a most torturing thing; poor B—— must feel it very deeply. I work some three hours with Dr. Christison. I get on finely with him, and we are knowing each other better every day; I hope we shall soon be on the thoroughest footing. Have you seen or heard anything of Faraday? I have not seen the Misses L., or Mr. Scott, or in truth, any one, since Jessie took ill. I have nothing new in the way of story or intrigue to tell you, which is my only apology for the barren character of this yepistle.

"Jessie bids me tell you that she will soon be up and will write you. She sends, carefully sealed, signed, and marked

'this side up,' a kiss, which you are leisurely to devour. If the hope of visiting London was great heretofore, how much greater is it now. Your account of the pretty young Quakeress, to whom I should be delighted to sing anything I could, and the notice of Mr. Mitchell's organ, are great attractions. If I knew the piano, he would perhaps teach me how to manage the organ stops, and I should make some progress. Meanwhile, don't you imagine I'm an accomplished piano-player; I'm just fagging away at all the horrid scales, gamuts, etc., but I'll stick closely to it. You must on no account think of waiting for me to see the sights of London; it is extremely doubtful if I shall get up at all; at any rate, it cannot be earlier than next autumn, so don't think of waiting. If I gained the Essay I am working at, that would decide me in the affirmative."

George's unselfish devotion as a brother and friend, was never more visible than now. Whatever his own sorrows and disappointments, at some of which even his most intimate friends can but dimly guess, he was able to put them aside, and assume the most hearty mirth, if others were cast down. When the infectious nature of his sister's illness kept almost all aloof from her, he would not be restrained from trying to cheer the little invalid. The evening-time that brought him home was eagerly longed for, and when her eyes were sealed up from the effects of the disease, and a ray of light unbearable, this good brother sat outside the chamber door, with a candle so placed, that no light could enter the room, and for hour after hour read the drollest stories, laughing over them with a heartiness peculiarly his own. Wishing to give some slight token of her gratitude for all this love and care, the child said to him one night before going to sleep, "Kiss me, Dozie." Immediately was the kiss given, to her great satisfaction; and not till weeks after, when the first glance at a mirror was permitted, did it flash upon her what she had asked, what the repulsive state of the lips had been, and the danger even to his life. Trifling though the incident is, it was a true expression of the generous nature, ready at any moment with unconscious grace to sacrifice life itself for the objects of his love.

The last entry in the journal treats of the lectures given at home; though written at a later date, its contents make it suitable for our notice at present.

"*May* 1839.—Following out the proposal to amend the subjects of ladies' conversation and study, I assembled some of them in my father's house, and delivered a course of lectures on chemistry, especially the chemistry of nature. It was in the winter of 1837-38, so that I was then *æt.* 19; the majority of my audience were older by a year or two. I was greatly praised and encouraged, most kindly listened to and assisted in many ways, especially by John Macgillivray, a generous, unselfish, happy fellow, without whose aid I should have come on very poorly. This course, which began in October, was first interrupted by the illness of my sister, and afterwards, in February, by the mournful indisposition of my cousin Catherine, so that only ten or twelve lectures were given.

"I place here the names of those who smiled on a juvenile attempt, both because I would keep on record the titles of those persons who gave rise to many a happy thought, and that as I hope to address other audiences, I may not lose the recollection of my first, which was more kind, generous, and forgiving towards me than any future audience ever can be."

Of the list which follows of twenty-seven names, thirteen have passed into the unseen world, almost all in the bloom of youth and hope, so that it recalls sadly, years of anxiety, fear, suspense, and desolation to the hearts in whose depths all those loved ones lie buried. In a letter of 1839, George says to his brother, referring to the death of his cousin Catherine,—"How little did I think, when last winter I assembled a few happy, youthful forms to hear of my favourite science, that in another year two of the fairest, and kindest, and seemingly most healthful of them should be struck down by the demon disease of our country."

The correspondence with Daniel continues the narrative:—

"*November* 4, 1837.

"MY DEAR DANIEL,—

"'Tis the last sheet of paper
Left blooming alone,
All its foolscap companions
Are crumpled and gone,

and gone to you every one of them, saving and excepting a single sheet which winged its way to the Row, and cost twopence, and this yepistle you certainly should not have had, had not the kind Mr. L— sent up to acquaint us with his proposed journey to the capital of Cockneys. I have therefore just arisen from the old piano, whence I have been educing the most melodious strains, again to take plume in hand, and indite a few lines to keep you from quite forgetting, among the ecstasies of 'big works,' that you have got both 'wee' brothers and sisters at home.

"To begin, as is befitting, with sisters: Jessie has been greatly delighted with your letter, has read it over and over again, and all the favoured entrants of her bedchamber are privileged with a sight of the elegant sketch of the Charity Boy.

"In addition to what I told you of formerly, I am to get from Dobbie a bas-relief of Arago's head, by David, and perhaps another of Cuvier. You see how covetous I am, and I entertain some hopes of getting a portrait of Fanny Kemble, whose portrait I long ago fell in love with, and used to go a particular road to see. If I get it, old Irvine shall leave his frame and give room to the fair ladye. It was the last work of Sir T. Lawrence, and is, according to my notion, the most beautifully expressive face I ever saw. It shall hang over my mantelpiece as my guardian angel.

"I called last Wednesday evening on Mr. Harvey; as it was after daylight had departed, I did not see his picture, but enjoyed the pleasure of a long conversation with him. He begged me to call again, which I certainly shall do at an early opportunity, and think myself proud of an admission to his studio. . . .

"We have had a very busy month of it, plotting and planning apparatus, and executing analyses, in most of which we have been very fortunate. All our wits were at work to manu-

facture a convenient arrangement of tubes for distilling, and at last we succeeded in erecting a most beautiful and simple apparatus, which completely effected its purpose, and saved us all trouble in tending it. You would be greatly amused did I tell you some of the little incidents which take place in the laboratory; they are rather of too flimsy a kind for grave insertion in a letter, however well fitted for telling you while chatting together; but as this will only cost you the breaking of the seal, I may venture to tell you one. While rummaging one day over one of the dark cellars which are appendaged to the class-room, we stumbled on a great, large, thin, glass vessel in a hamper, generally used for holding sulphuric acid, and known to merchants by the title of a carboy. It was at once agreed on by the triumvirate, composed of Rob. Christison, Geo. Wilson, and Mariano Martin de Bartolomé, that the said vessel would make a most excellent recipient for the distilled water we were engaged in preparing. We soon succeeded in dragging it from its obscurity 'into life, and light, and fame,' and in doing so discovered that it contained a large quantity of some liquid. Christison out with the bung and down with his nose almost to the bottom, and slowly pulled it out with a most merry, gleesome look, as he sung out, 'Smell that, Mr. Bartolomé, and you too, Mr. Wilson.' As soon as we had inserted our probosces as far down as we could (I half wish that I had your nose, but no matter), he declared it was the mother liquor of opium; in other words, the infusion of opium, from which the morphia alone had been removed, and which contained all the other pure and crystallizable principles. Here was a prize, a very useful bottle, and a valuable liquid. All the basins and platters were immediately in requisition to contain the nectar; and Bartolomé and I set about devising a plan of cleaning the bottle, which was encrusted with the thick resinous matter. Alas, alack-a-day! man is born to disappointment; the fragrant liquid, after boiling for three days, and almost suffocating us with its extraordinary odour, ended in smoke, affording us nothing but an abominable tarry stuff, which has spoiled all our filters, towels, etc.; and for the bottle, woe is me! 'Frailty,' as I had occasion to write to Miss L— in the letter I told you of,

'thy name is glass.' While Bartolomé was working away with a long flexible rod and a sponge, polishing the inside most carefully, for he is a very neat-handed, ingenious fellow, bang was heard an awful sound, and the point of the rod protruded! So much for our calamities. I hope you sympathize. I am sure J. G. retains a sufficiently vivid remembrance of his apothecary dealings most sincerely to feel with us in our present bereavement.

"I may tell you another odd conversation—one with Bartolomé—who is really a fine fellow, from whom I learn a great deal. We were talking about some of the infidel and atheistic students, and mourning their folly. 'Ah! I wish they were Free-Masons, they would then know the true God.' I am sure this idea of evangelizing wicked people will greatly amuse you, and I could tell you a great deal more; but here is James L— arrived to say that Mr. L— is just going, so I must seal up this bad and hurriedly-written letter."

"LABORATORY, *November* 25, 1837.

"'SPECIMEN OF HIEROGLYPHICS.'

"MY DEAR DAN,—I have been upbraiding myself for many days back for not writing you, but, in truth, I have been very busily occupied, so much so, as almost to preclude me writing any one, and I am still in debt an epistle to Macmillan and B—, both of whom I allow to stand aside (though you are not to tell them) till your superior claims are satisfied. All notion of letter for letter is absurd in our present circumstances. I shall write you when I find time, taste, and opportunity, and I have no doubt you will do the same to me, so I proceed to describe. I may observe, that I should not likely have had leisure sufficient to write to you to-day, had it not happened that last night, while engaged in delivering my second chemical demonstration before an audience of twenty, a piece of phosphorus on the end of a wire, which I intended should have descended in a vessel of oxygen-gas, became refractory, and whether because not dry enough, which is Macgillivray's theory, throwing the blame on me; or because it was not sufficiently fixed on the wire, which was only stuck into it, which is my hypothesis, blaming Macgilli-

vray, who insisted on trying his own way of impaling it, I know not; but suffice it to say, that he and I got three fingers apiece burned, and here am I with a great blister on the *neb* of my middle finger, prevented from going to Christison's, and thereby enabled to write you an yepistle. We both deserved the punishment; and with my hand stuck in a jar of water, I spoke on for a short while longer, but the phosphorus still sticking to my fingers, I had soon to stop, and after a few remarks, closed the scene; the evening, however, had got on magnificently before, and this was but a startling episode. With my one hand in a jug of water, and my other across the table, I bade the ladies good-bye, assuring them that if they would return next Friday, I should promise them something better than even that night, with which they expressed themselves pleased, and whispered to Miss Gibson that I would only burn my own fingers, and not theirs. Our digits wrapped in cotton, my fine young friend Macgillivray and I sat quaffing our tea together in joyous and laughable reminiscence, endeavouring to throw the blame on each other, but obliged at last to confess that we had both neglected certain necessary precautions. We shall repeat the experiment next night, we hope and confidently expect with full success; but fire is 'the goddess of the chemist,' and I don't mind being burned in carrying on chemical researches.

"Now, I am going to tell you another laboratory incident, for unless I tell you them I shall have nothing to tell you at all, for as far as concerns 'moving accidents,' my life lacks them: the variety is change of thought, notion, or speculation, not of place, personages, and scenes of action; only, if I weary you, tell me, and I will fish up some other thing for you.

"It so happens that Dr. Christison's laboratory comprises three huge rooms, at considerable distances from each other, and all far removed from the outer door; it generally happens that we are spread through the rooms, most of us separated from the entrance-door by two long passages and two flights of stairs. It is therefore a great bother to us when people come to the door, obliging us to follow this long *circumbendibus* of a way to let some idler in; for it unfortunately happens that the laboratory is near the college gate, and vagabond strollers of all sorts come

poking, and peering, and rattling at the said door. For the last month the door has been most carefully attended to (this being the primary chemical duty of the Doctor's assistants), because the new students are taking out his ticket, and he says himself merrily, 'I am willing enough to run to the door just now when the prospect of a fee allures me, but you'll see, Mr. Wilson, I'll not be so alert by and by.'

"Well, Christison and two of us were standing together carrying on some analysis of salts; over and over again the door had been knocked at, and shaken, and rattled. 'That restless door,' says Christison; but I know something more restless.

"It happened, the Doctor told us, refusing to answer some questions about the chemical operations we were engaged in, and declaring that he would tell his story first, that when he was a young man, he was a clerk in the Infirmary, residing there. Among his companions was a grand-nephew of the celebrated Cullen, the physician, a very clever young fellow, by far the cleverest person Christison had ever seen; moreover, good-looking and handsome, and having a very large circle of acquaintance among the fashionables of Edinburgh, and a great favourite, from his talents, handsomeness, and politeness, with the ladies. Accordingly, when he and any of his companions walked through the streets together, every few minutes he met some one he recognised, especially ladies, and of course he politely raised his hat and did graceful obeisance. Well (for my plot is complicated), there was another Infirmary clerk, one S——, I think, an 'uncombed' lad from the country, who, from his various oddities, was the butt of the rest; nevertheless by no means destitute of some cleverness, and although generally the theme of ridicule, often succeeding, as you must have seen such persons do, by lucky single strokes, in occasionally flooring a whole bevy of cleverer fellows. One day, after dinner, it chanced that the clerks, being very religious, fell to talking about the probability and nature of punishments in another world. Espousing the doctrines of Pythagorean transmigration, they wondered much into what sort of animal or form each would be transformed. 'I wonder,' sang out Cullen over the table, 'what animal you'll be turned into, S——?' 'I don't

know,' says S——, bristling up, for the very question had awakened a wild shout of laughter; 'I don't know, but I would not, at any rate, like to be turned *into your hat.*' Was it not exquisite? So much for the 'restless hat.' . . . .

"We have received the most gratifying intelligence from Russia. Samuel is fast recovering, and was able to dictate a portion of the last letter. He was very ill; a whole month delirious: he will likely come home, and not think of Berlin at all."

"LABORATORY, *Friday Evening.*

"I have finished my fourth discourse on chemistry, and the knife which mended this pen has just been absolved from the cutting of corks so as to fit accurately the bottles which serve so many useful purposes. I shall, however, take up no time with a recital of the various perilous risks which fragile tubes run, and how they escaped being broken, etc. etc.

"Let me take other topics, though not to be less egotistical, for I am about to recount to you so many particulars of my own most wonderful doings. Well, an odd enough incident occurred to me the other day. When entering the College, I saw in its post-office, in a hand which I did not know, a small note, marked 'George Wilson,' which, presuming it must be for me, as there has been no G. W. about college since I joined it, I immediately dragged out, and promised Mr. Borrowman his twopence next day. On opening the epistle, I was startled by the first words 'Dearest George,' and, on turning to the end, scarcely less so by the concluding term, 'Yours in love, AGNES Y. S. M.' You may guess what kind of letter it was; inquiries after the health of the G. W. addressed, protestations of fond admiration, and a curious declaration that the correspondent, all the time specified, was suffering under toothache, which she declared would be dispelled, as by a '*farry's* wand,' by the sight of her beloved, and some more of such stuff. Perfectly puzzled, I read it over and over again; there was no other G. W. known or registered about College; it must be for me. I did not know any one, high or low, named Agnes; so that, unless some servant maid or the like had fallen in love with me! and taken this modest plan of saying so, I could not tell who could be intended.

Puzzled what to do, I showed it to Bartolomé, and then to Christison, who could make no more of it than I; Christison declaring, however, it must be for me. At last, Bartolomé went to the college album, but I was the only G. W. It might still, however, be some student of divinity, or some extra-collegian who took advantage of the post-office; and, as I felt perfectly convinced that I was not the enchanter that could wield the 'farry's' wand, and as it was no business of mine to keep her from her 'Dearest George,' though I was not he, I marked within the envelope my profession and address, and a statement of my having opened it, but being sure it could not be for me, I had returned it; I sealed it and gave it back; this was on Saturday. On Monday it was gone, and no questions asked, nor have I heard any more about it. I thought it possible the veritable fellow might conceive the opening of the letter a designed insult, and demand satisfaction; but he had the good sense to say nothing about it. How he and Agnes took the singular *dénouement*, I, of course, do not know; but Christison very justly remarked that it would have been the best answer to a demand for explanation, to declare that I was the insulted person, in having my name connected with such persons; and so the matter rests.

"Now for some Laboratory incidents, though I fear you will but shrug up your shoulders at the word, and think of the middle syllable, 'bore;' nevertheless, as your sensitive nose cannot be offended by noisome odours or pestilential emanations, I shall venture to record another thing or two, begging you will read them with the window up, and put out all the contaminated air with your bellows.

"Well, my first is a claim on your sympathy, but about a very trivial matter. You'll remember a paragraph regarding the finding of a huge glass bottle, containing an opium liquid, which disappointed us completely, our bottle breaking in the cleaning, and our stuff almost suffocating us with its overpowering odour, and after all yielding nothing. It so happened, that some of the large porcelain basins, in which the stuff had been evaporated, were left standing on the table of our farthest back room. Something led me into that room, where I had not been for

some time, and carelessly casting my eye over the table, I saw something dark and shining in the bottom of the basins; remembering our former trials, I picked out a little of it, and saw it had a crystalline structure. What, thought I, if this be the muriate of morphia, which has slowly separated from it. I showed it to Dr. Christison; 'Oh,' says he (for he had been too often disappointed to entertain sanguine hopes), 'it will just be muriate of lime,' a useless thing. I resolved to try; boiled a little with alcohol in a tube, and having my attention at the time directed to something else, put the tube aside, thinking that the proof of its being morphia was incomplete, yet puzzled to conceive it anything else. For two or three days I was employed in other processes; and, on the third or fourth, it chanced a test tube was wanting. I carelessly took the one in which the solution of the crystalline matter had been put, but as I proceeded to wash it, I was struck by a singular appearance inside, and what was my astonishment and delight, on looking more closely, to find a most beautiful circle of small feathery crystals, which it could not be doubted were morphia, and which was completely proven to be this, by adding the test of morphia, which gave the most characteristic results. I am now analysing the whole, some two gallons of stuff, having volunteered to undergo the disagreeableness of the smell, which I keep from every one else, by shutting two glass doors between me and them. You will understand that this is refuse liquor, discarded by the druggists as useless, from which we are separating a large quantity of the precious high-priced muriate of morphia. We shall have a fine laugh at old —— throwing away the good morphia, and work hard at it, for I believe it will please Christison; and there is a great deal of useful manipulation to myself.

"But I'll tell you another laboratory tale, which cannot fail to interest you as a Scotchman, away from your country, and fond of your native language. The other morning, when all standing before the museum fire, before going in to lecture, Bartolomé announced some rather singular proposition, on which the Doctor commented by saying, 'It's all a *lee* frae end to end.' This was quite unintelligible to Bartolomé, who is a capital English scholar and speaker. On this Dr. Christison took

occasion to remark, that he had generally found a few Scotch words sufficient to confound one who was well versed in English, and quoted as a case what occurred to him in Paris. It so happened that he and several other young Scotchmen paid a visit one evening to the Théâtre-Français; a short time after their arrival, seating themselves in one of the most conspicuous places, they began, with the characteristic recklessness of Britons, to talk treason about all that was going on around them. In the midst of their criticisms, a very polite old French gentleman, with a low bow, leaned over the seat behind them, and suggested to the thoughtless fellows, that there were a great many more of the audience knew English than they were at all aware of, and that they would assuredly get themselves into scrapes if they continued talking as they had done. 'Come,' says Christison to his friend Cullen (he of the hat), 'we'll try them with a little *Scotch*;' and so they began, Christison watching the face of old Monsieur, but soon convinced that he at least had not studied the mysteries of 'but an' ben,' etc., and ever after, when they had any foolish thing to say, they discoursed it in good broad Scotch. When you commend me to my much esteemed and loved friend, J. G., give him my advice, if you please, to be sure and study Scotch before going abroad, and then he may say anything about their vaunted pictures without getting himself guillotined for his trouble.

"In spite of Christison's studiousness in Paris, he seems to have loved most heartily all sorts of fun. He told us of himself and half a dozen other Scotchmen, celebrating a new-year's night by a supper, and shouting and singing, to the amusement or vexation of the restaurateurs; winding it all up by finding their way home through the streets of Paris, singing at the full pitch of their voices, 'God save the King!' to the utter astonishment of the sentries, who well knew the tune. . . . .

"I wish, I hope, and I expect for you all success; and I can do this the more heartily, as I can in return crave sympathy; for though it might appear otherwise, by a reference only being made to lectures and Christison, my whole time and energies are occupied in reading, writing, and experimenting for my

Essay; and I only allow myself half an hour when walking, to think of my next lecture. Dr. Christison has given me liberty to try as many experiments as I like in his laboratory, and I shall not miss the opportunity. Meanwhile, I am toiling night and day, as you are, elated with hopes and depressed with fears and troubles, as you are, and feeling how much more would be my progress had I you beside me."

"*Saturday, 16th December.*

"The letter which envelops this was written to-day, and I now snatch a moment to bring up to the present time, as far as time will permit me, the news of house and family.

"To my last I intended to add a postscript, but so many things have since occurred to me as deserving a place there, that now I have dropped the idea of filling up that space; and I doubt not that, after filling up this letter as far as time will permit, the accompanying *Maga* will serve to amuse you and J. G. about Dr. Barry's fooleries. 'He has been bringing home an odd animal, one of those, you will remember, referred to by Sir H. Davy in his 'Consolations of Travel,' as found among the lakes of Carniola. Of course he has been acting Jamie the showman with it, and deserves the whipping he gets. The other picture is of young Thomson, very like; the rest can scarcely interest you.

"Mr. Dobbie and Mr. M'Donald form a part of my Friday audience. I have received great kindness from the former. He has given me a most beautiful—I cannot say more of it, I sum up all, I think, in the words, it is a beautiful—*basso relievo* of Arago's head by David the French sculptor; it is a very fine head, and exquisitely done: as the head of a scientific man, as the head of one I have seen, and especially as a piece of fine and high art, I greatly value it. Mr. Dobbie told me last night he had a Christ's head also for me, so you see I have a great deal to make my solitude happy. I am going to have a unique Study. You remember two white jars of unglazed porcelain, one of them the property of a lady in Glasgow, a Miss Mackay, but I have seized on both. Mr. M'Donald is to paint them or stain them brownish-red. They are then to have black devices,

alchemical retorts, crucibles, etc., painted in black, like the Etruscan vases. Mr. Dobbie is to supply a Moritz Retsch-like design for the central part of some alchemical thing; and won't I be a happy man!

"I must scamper off to Christison, so forgive this scrawl."

The length of letters in those old days is inconceivable to the degenerate correspondents of this penny-post prepaying generation. When a letter cost thirteenpence halfpenny sterling, and its recipient was expected to pay for it, his correspondent felt himself on his honour to send the money's worth. Such, however, was not needed as a stimulant to brotherly affection. A well-filled sheet of foolscap to Daniel, of date 20th January 1838, concludes as follows: "How I have wished to be beside you, when reading Lamb's letters, which, after reading all the reviews on them, I got hold of in reality this week. They are most exquisite. I have laughed and giggled to myself over my solitary cup, and wished I had been near to read them to you, and have a sympathizing agreement in praising them. Many of them, I think, far excel some of his essays. The India-House and the Temple are now hallowed in my eyes, and if ever in London, I shall take care to travel to them, and you will join me, I am sure." And being now close to the foot of the fourth page of a closely written sheet of foolscap, and one o'clock A.M. striking, the letter abruptly closes; but with the morrow receives a postscript nearly as long as itself, embodying the chronicle of an event famous in the College annals—the great snow-ball bicker of 1838.

Here it is:—

"*20th January* 1838.

"Good-morning! You must have seen by this time a notice of certain College disturbances, which being in truth riots or insurrections, have a good deal excited public attention. The newspapers have given most lying accounts of it, which I dare-say, or rather am sure, you have already passed over as unworthy notice, knowing the doubtful morality of newspaper editors, especially Radical ones, towards students, who are of necessity Conservative in their likings. Well, here's a true,

and I am sure a refreshing account of the College bicker and its consequences.

"Last Thursday was the first good snow storm we have had, and a goodly quantity bespread the ground. We, the students, began to bicker each other as usual. A posse of students set themselves in the quadrangle, so as to command each class door, and pelt the sober fellows who had to run the gauntlet as they came in or out: then the pelters divided into two parties, and pelted each other. And it was most amusing to see one event of the skirmish. While throwing at each other, a host of idle shop boys, bakers, servants, etc. had placed themselves in the [illegible] and were amusing themselves gazing on, when [illegible] without laying their heads to[illegible] and rushed on the spectators. [illegible] knocking, driving, [illegible] and baskets; while a mer[illegible] unawares thwacked them soundly.

"[illegible] in the day's deeds, and not in [illegible] with them; for, meanwhile, a [illegible] had begun attacking the students as [illegible] their classes, and soon the fight became warmer. Now the first element of riot began, namely, that the police would not take up the idlers, while they came into College and apprehended students. This was a double affront: first, the police showed partiality in only taking students; second, they came into the quadrangle, which the students believed (it afterwards appeared wrongly) was sacred from their intrusions.

"So they had a meeting on the Mound, swore to avenge their affronts, and agreed to meet, each with an old hat and a short stick. Away then they went; a procession, four abreast, fine gallant young fellows (Medicals, I need scarcely say); and after wandering through all the streets, they parted. Next morning, they provided themselves with chapeaux and shillelahs. Little was done in the first part of the day, but it is notorious that even on the second day it began with the misconduct of the police in refusing to take up blackguards who assaulted students. A regular bicker began against all who passed; the middle gate being shut, and the Meds crowding on the stairs, showered away.

All the shops were necessitated immediately to shut their windows, to prevent more breakage, and the thoroughfare blocked up. Still the police continued to aggravate the feelings of the students by refusing to take up any of the primary aggressors, and now the attack began on them. They had assembled in considerable numbers, and Bailie —— was strutting in all his dignity, and getting pelted soundly. At last some of the superior lieutenants of police arrived, and they attempted to dislodge the students: they repelled them easily, and a shout was raised, 'Open the middle gate, and see if they can get in;' so the middle gate was opened, and in they rushed. At first the students gave way; the short, heavy batons of the police were more efficient in the porch, and they drove them back in the quadrangle, without ever taking prisoners.

"The students, too, at first fought in detached groups, and necessarily quailed before the regular phalanx of the batoned mercenaries. Soon, however, counselled by an Irishman (every one of whom was, of course, led there by natural instinct), who made a speech to them, and ranged them in an opposing line, bringing all the short sticks to the front, the long ones being behind, so as to hit over the heads of the first rank—a glorious plan. After this was resorted to, victory never left the students. They battered the police, and *six* different times drove them to the porch, where their short batons availed them, and there they stopped. Along with them, and this was the grievous thing, was an infuriated mob, who gladly took part against the students—bakers, and butcher-boys, and sailors, mingling in the affray by police connivance, and being even given the sticks captured from students. This was an hour's work from two to three, and things getting serious, a despatch was sent for the Lord Provost, who made an attempt at addressing the students, with the hope of pacifying them. One huge Irishman walked up, and, patting him on the back, asked in a slang phrase of the day, but sufficiently expressive on this occasion, 'Does your mother know you're out?' Another promised him protection in his waistcoat pocket; and all laughed and jeered at him. Infuriated, he rushed off, addressed some words to the mob, and up to the Castle for the military, who by this time had become

absolutely necessary, for blows had been given desperately, and many gashed heads testified to the fury of the contest. 'Tis said, I know not on what authority, that many of the police got their arms broken. I don't very well know, but it was their own fault as a body. Meanwhile, an official was obtained, and the Riot Act read at the gate, amid the pelting of the officer, who got it knocked out of his hand, and himself driven out, the students encouraging each other to kill the police, which they could do before the reading of the Act was over. Meanwhile, down came the military as fast as they could run, with two ball-cartridges in their pockets; and having reached the gate, the bugle was sounded! and with fixed bayonets, the officers with drawn swords, they charged the gate, and, of course, drove the students before them. The scoundrelly police now came forward, and picked their men and the ringleaders, lugging them off to the police-office. Meanwhile, the company of soldiers was drawn up across the quadrangle, and five minutes given for dispersion. The major looked very nervous, dreading evidently that the students' rashness would drive him to extremities. He is a fine fellow, a Waterloo man, and, of course, like all good officers, dislikes quelling a civil riot. He seemed afraid of his men taking the students' part, especially when a Pole shouted over the window, 'Shoot the police!'

"The major had him immediately apprehended, and with the back of his sword drove back the students, declaring he did not wish to hurt them. Very likely something awkward would have occurred, had not Christison mounted one of the broad corner stones of the balustrade, and thence addressed the students, who received him with acclamations, and waved their hats, which they took off as a token of respect. He bade them go away, as they were all liable to be apprehended and lodged in jail. We had to find our way out, through a line of soldiers across the North Bridge, amid the jeers of the dastardly mob, the soldiers laughing, while the police put out their spleen against us.

"That night every one like a student was assaulted by the rabble, who always fell on single persons and abused them. Macgillivray was prevented from coming over on Friday, in

spite of his courageous bravery, by the attack of a crew who severely hurt him. He was taken, however, as a culprit to the police-office, which was so full that he got out. The other students were bailed out, and trial is coming on. Meanwhile, the students and the professors are having a daily committee, sitting in Dr. Christison's room, collecting evidence, a Mr. Scott, solicitor, having volunteered his services; and we hope to have against the police various charges, likely to cost them their places. The students will probably be fined, in which case we'll all subscribe to pay. I shall most cheerfully contribute my mite. The students are all in great glee. A number of songs and parodies are written on the occasion, such as the 'Battle of the Quadrangle,' the 'Gallant 78th Regiment,' and so on. There are parodies, one a most excellent one, on Hamlet's famous scene, 'The Policeman's Soliloquy,'—'To stand or not to stand, that is the question.' One on the Battle of Hohenlinden, the Battle of the Baltic, the Lady of the Lake, Byron's Hebrew Melodies, Burns' Tam o' Shanter, etc. It is intended to publish them in a pamphlet afterwards; if so, I'll send you a copy. The students have no ill-will at the soldiers, but praise them highly. It is declared that the soldiers were brought to accustom them to snow-fighting in Canada. In another song, the 'Major's Address to his Men,' he shows the probability of his being knighted, and recommends the expunging of Salamanca from the flags, and putting in its place, Quadrangle, and so on."

The *Maga* alluded to in this letter was a weekly periodical, sold at the College gates, of which Edward Forbes was editor, and the contributors students. It might be considered a University *Punch*, containing, as it did, caricatures of lecturers, chiefly professorial, as well as of civic dignities, or others who chanced to rouse the wrath or mirth of the students. A healthy spirit ran through it, and it formed a safety-valve by which the worries of student-life found a harmless outlet. Correspondents were informed that "no libellous personalities, or *bêtises* of any kind," were admissible. The number George speaks of sending to his brother was the first of that Session; and Dr. Martin Barry, of whom it treats, had excited much amusement by

wonderful accounts of an ascent of Mont Blanc, from which he had just returned.

To George and his cousin James, also attending College, the *Maga* was the source of much enjoyment. On the day of publication it was brought home with glee, invariably producing an amount of merriment incomprehensible to those in the household to whom the butts for satire and ridicule were less familiar. They were not only admirers of, but contributors to it. The first article sent by George at this very time is mentioned in notices to correspondents. The signature B. I. stands for *Bottle Imp*, a name he had adopted long before this, occasionally dating letters from "*Laboratorium Impicum.*"

"B. I.'s communication is received, and meets with our approbation. All articles from the same quarter shall receive due consideration; so he may spin another yarn or two with a fair prospect of insertion." A private note accompanied the article.

"To the Editor of the *Maga.*

"Sir,—Being a warm admirer of the University *Maga*, I read with sorrow your doleful account of editorial difficulties, and with the hope of assisting you, bestirred myself to the producing of the following. I know not whether it will suit your purpose or not; perhaps its length will be sufficient to exclude it; if that be passed over, the subject may be amiss; but having quizzed police, military, mob, Council, Provost, etc., till the subject is threadbare, why should we not quiz our sensitive selves, and hand down to posterity a record of our present College fashions for the benefit of future Antiquarian Societies? If the thing suits your purpose, give it what name you please. Perhaps 'Ourselves,' or 'Sketches about College, No. 1,' might do; but of this you will be best judge. To save yourself and the printers trouble, I have eschewed hieroglyphics, and got a youngster fresh from the irons to write it out in his best hand. --I remain yours, etc. etc., "B. I."

The name given was "The Consulting Room, and College Philosophers."

"'Tis distance lends enchantment to the view;' so saith our poet, and so seem to think the sight-seers, who value places the more, the nearer they are to our antipodes. We read daily of a 'Visit to the Slave-Market at Cairo,' of a 'Day spent with the King of Timbuctoo,' or 'Among the Inhabitants of Pitcairn Island,' or 'With their Majesties of Otaheite.' We hear of stolen journeys to the mosques and harems of Constantinople, of visits to Jewish synagogues, Greek convents, and Catholic monasteries, with sundry other notices of peeps into salt-mines, coal-pits, madhouses, and all sorts of charitable institutions; yet we never chance to find among the multifarious tomes of those vagabonds who wander to and fro over the face of the earth, in search of choice specimens of 'men and manners,' any record of a visit to the Consulting Room of our University Library. We have in vain searched through all our Voyages and Travels, from the folios of Humboldt down to the octavos of Sir Francis Head, Mrs. Trollope, or N. P. Willis, but hitherto hopelessly, unless a reference, in the late work of Rich on Koordistan, to the site of the ancient Babel, has an implicit allusion to the confusion of tongues characteristic of the Student's Den. And we have equally mourned to see the many strangers who enter its precincts, attracted by our unique Museum, our magnificent Library, and our choice collection of pictures, pass by the 'open Sesame' door of our Reading-Room, except at rare times when some illustrious stranger, with one of our august Professors for a *cicerone*, thrusts his hand inside the door (thereby exhibiting men and manners), and listening for a while to the 'sounds within like music flowing,' draws it back, and marches off to some more noble Academic Lion.

"To prevent a continuance of this mournful inattention to one of our most noble institutions, we now crave our reader's attention to the short notice our limits permit us to give of it.

"After the first hum of many voices has become familiarized to an entrant into the Consulting-Room, he begins, like a tea dealer or a pearl-fisher, to arrange the busy crew into three sorts —good, bad, and indifferent; which, of course, he afterwards subdivides into various genera, species, and varieties. We shall rather treat the subject in a popular way than in a strictly dia-

lectic one, being unwilling to trench on the business of the Logic chair.

"We set out with the fundamental law, that the farther in you go, the more quietness, thought, and study you find. There is one square table at the door, with magnificent mahogany chairs, in the same style of costly decoration as the rest of the gorgeous apartment, where, to the best of our knowledge, a new idea was never picked up, it being the rendezvous of a set of *raffs*, who loll on the chairs, lay their accoutrements on the table, and bravely bid defiance to the demon of *ennui*. At the other end of the room a different set are seen. We generally find, about the second divan, some two of Forbes' crack students, unravelling the mysteries of the last week's problem, now with head bent over, tracing the course of their mathematical hieroglyphics, and anon, when some debatable point arises, talking with a loudness and energy sufficient to square the circle, though it were as large as Ducrow's amphitheatre. A little farther on sit arm-in-arm, most lovingly, *their* debate being over, two neophyte Aristotles, fresh from the logic class, diving deep into the subtleties of innate ideas, concepts, correlates, and the like—these, we need scarcely say, are disciples of the Academic school: the philosophers of the Porch, a much larger body, will be found clustered round the College gates, studying human nature on the great scale; and the Peripatetics, by far the most numerous body, oscillate between the North Bridge and Princes Street, unless the weather be wet, when they join their rivals of the porch, or, along with them, mingle with the Academics; the Epicureans, an equally large body, are spread over the many temples of their order situated in the neighbourhood, among which we may particularize one, having marked on its walls the mystic words DOULL, SINCLAIR, AND WHITE, which, according to the learned Greek Professor, indicate the names of the ministering hierophants within; the Stoics in our University a distinct branch from the disciples of the porch, a mere handful, will be found in an adjoining edifice, sacred to *their* order, eating hard biscuits and drinking water. But to return: we can only indicate the more prominent characters of the room, and we draw attention to a species, individuals of which are to be found at every table.

They are known by their care-worn, anxious looks, and by having a huge folio of anatomical plates before them, and a Dublin Dissector lying hard by. You peep over their shoulders, and find them tracing the course of the vidian nerve, the relations of the external carotid, or the like; and you know that before the eye of each floats, like the Mirage of the desert, a japanned tin-case, which, when attempted to be grasped, fades like Macbeth's visionary dagger into viewless air. Reader! these unhappy mortals are aspirants to the name and honours of Surgeon. You will join us in wishing them a chirurgical exit from the inquisition in Nicolson Square.

"We pass over the stray Divinity students, who have wandered from their own library; the Law students, digesting Digests of Scotch Law; the students of *Humanity murdering* Latin, *et hoc genus omne*, to notice a strange crew, whose occupation we could never divine, or the exact object of their frequenting College. We think naturalists would style them the aberrant types of the genus Student. We observe them stalk up to the librarian, and ask the 'Small' favour of some huge Greek or Hebrew tome, over which they bend for hours together. From the want of 'Attic salt' in their conversation, as well as from direct proofs, we believe that the object of their studies is to restore to its ancient glory the forgotten Doric dialect.

"B. I."

It may have been shrewdly surmised by our readers that DOULL'S temple was a pastry-cook's shop; and as the name of the college librarian is Small, we can understand what a huge book had to do with the *smallness* of the favour. So fully did the preceding communication "meet the approbation" of the Editor, that it induced him to seek the personal acquaintance of B. I. Those two genial spirits found in each other many points of sympathy, and the friendship then formed soon ripened into true regard and affection, which only terminated with life.

The second contribution of B. I. was not inserted; its quiet satire was abundantly appreciated, but it did not seem to the wise editor prudent to turn the peculiarities of the College Museum into ridicule, and thus offend the Professor of Natural

History. Seeing it can injure none now, and may amuse many, there seems no reason why it should not appear in our pages.

"It is now nearly four years since the courts of the University rang with a debate which for a long time engrossed public attention. There was as yet no *Maga*, and the world was not enlightened by the wisdom of the disputants. It is not our intention to do more than merely allude to it, as a fitting introduction to the subject under consideration.

"Among the literary students arose a question concerning the proper pronunciation and etymology of the word generally spelled and pronounced musèum. After much wrangling and turbulent debate, the disputants divided into three sects, to one of which each student interested in the progress and result of the discussion joined himself.

"The first party, or disciples of the old school, advocated the common or vulgar pronunciation already referred to, declaring that the word in question was derived from the Latin *musa*, since the first cabinets were dedicated to the Muses.

"The second sect, the disciples of the middle school, reversed the sound of the word, and named it as if it were written muzzeum, scoffed at the invocation of etymology as fitted to determine the point, and rested the truth of their doctrines on some new laws of euphony, deciphered from one of the manuscripts found in Pompeii.

"The views of the third party (which included all the stars about college) supplanted in the minds of all men of calm and sober intellect the opinions already considered. They declared the right pronunciation to be mŭsēum, contending that the word was derived from the Latin *mus*, a mouse, since, though cabinets may come to contain elephants, camelopards, and even mammoths in the course of years, yet must they all have begun by enshrining the stuffed skin of a mouse. True it is that the illustrious Pillans, seconded by the learned Scholtenbruner, held it to be against all classical precedent to derive a word from the nominative and not from the genitive; but as the pages of the *Maga* are as open to them as to us, and there being no claim on us to record their reasons and arguments, we unconditionally advocate the common-sense view of the question.

"Let us now enter the Museum, and in this paper we shall confine our attention to the lower room containing the larger animals. We are not about, showman-like, to say, on the right you will behold this, and on the left that; but, taking the great Guvier as our exemplar, we are about, as he did, to open up a new field of fossil zoology not less striking than that which the illustrious Frenchman *carved* out of the gypsum beds at Paris.

"We had not paid more than two visits to the Museum before we began to peer narrowly into the characteristics of the assembled animals, and for the sake of simplicity we took the larger quadrupeds first; and, singularly enough, we have discovered two extinct species, which we proceed to indicate to our readers.

"On your left hand as you enter the room stands the effigy of a huge elephant, at first sight not apparently much different from other stuffed elephants. To be sure, it has a resplendent coat of blacking, which all of them have not; but we daresay Day and Martin, or, failing them, Warren, could nigrify any others as well; otherwise, this animal, to the vulgar eye, presents nothing remarkable. Great discoveries, in truth, are only made by those who, as Professor Whewell remarks in his late work on the inductive sciences, possess 'exact facts and clear ideas.' Being favoured with a very acute perception of both these desiderata, we carefully scrutinized the wondrous quadruped 'from the tip of the nose to the insertion of the tail;' and as our eye wandered over the huge mass, we were struck with something singular about the lower lip. We had traced the wrinkled skin from the bosom upwards in unbroken texture, when suddenly we were startled by a strange line of demarcation which ushered us into a new territory. On approaching nearer, it seemed marvellously like a piece of interpolated canvas, and a closer inspection convinced us that the pointed characteristic lip was neither more nor less than a piece of cloth painted black without and red within. It was not without great caution and many doubts that we adopted this opinion. We had read of 'canvas-backed ducks' (see Stewart's 'America'), but of canvas-lipped elephants, never; and as a diligent inquiry soon satisfied us that not only did no living specimen exist, but that no dead one adorned the walls of another museum, we gazed on

[illegible] Rhinoceros For-

[illegible] the last notice of the memorable [illegible] got a paper containing a [illegible] I shall say nothing more of it [illegible] will refresh you with some of [illegible] witty counsel [Lord Robertson].

[illegible] Sanitary, who had made himself very [illegible] snow-ball riots.

The students' expenses amounted to two hundred pounds, and we are all subscribing.

"Catherine is much the same; for some days back she was better, *i.e.*, in her feelings, for the real state of the case never altered; but she is again not so well. She is in that state of mind which theorists might deny, as impossible, but which all who have felt keenly or have thought much, can enter into and sympathize with; she is entertaining the incompatible feelings accompanying a looking forward to another world and yet a lingering interest in a present. That the latter should remain is no cause of wonder, specially in her disease." What this disease was, with its clinging to life, the reader will easily surmise. Catherine was the second oldest of the cousins, and was loved as a sister. Her illness was of long continuance, as will be seen from references in future letters. Truly the clouds returned after the rain in this household, and the stern monitor, affliction, seemed commissioned to take up her abode in it, and teach, for many years to come, lessons hard to be learned.

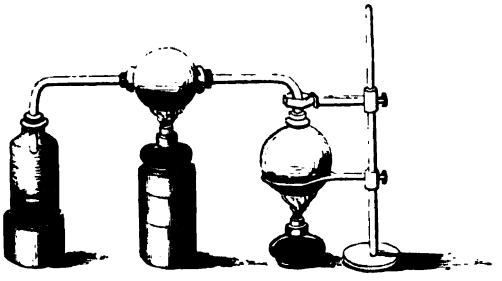
The enthusiasm with which work in chemistry was prosecuted is strikingly shown in some letters of which specimens are now given.

"*February* 7, 1838.

"MY DEAR DANIEL,—I am quite ashamed to take up so small a bit of paper to begin writing to you. I have no foolscap, and a long sheet appals me. In truth, I should not have written to you at all (for my time is very much occupied at present), had I not been told of a gentleman going to London, who will take the accompanying drawings, which I have had lying beside me waiting an opportunity. You will recognise them as sketches of the leopard's skull, and they were done for practice' sake by your *quondam protégé*, young Macdonald. As soon as I saw them, and called to remembrance your fondness for that osteological ornament of *our* mantelpiece, I thought the drawings would please you.

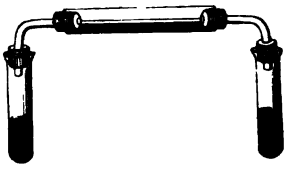
"I am very glad to learn your comfortable progress. Your persevering undauntedness, spite of frozen water, etc., was to me quite refreshing and invigorating.

"Be it known to you, most worshipful brother, that in the course of some speculations on crystallography, which sprang out of my abortive essay to bring to the test some views, which, could I but realize, would be the making of me, I thought of trying to make a chemical compound, whose existence hitherto has been only guessed at—a compound of iodine and sulphur. Searching in Dr. Christison's, I fell upon a glass ball, a most necessary piece of apparatus, and cut and bent a piece of glass tube for myself, and fished out a small glass bottle, my object being to pass the vapour of iodine over melted sulphur, thus: I suppose a drawing will please you most, so there's for you.

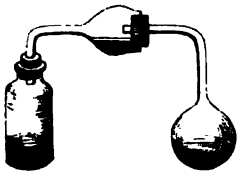


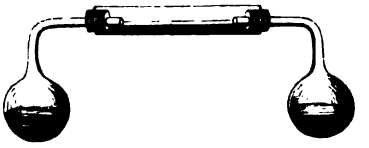
Well, I only waited for an opportunity, which soon presented itself in the illness of Dr. Christison, which kept him at home on Saturday. Secure from interruption (though remember Dr. Christison would let me experiment before him, but I hate to have any one near me, and work best alone), I set up my apparatus, as you see it above, and worked from ten till two in a lower room without a fire. On first removing the vessel thereafter, I was stopped by an explosion from the stoppage of my tubes. There seemed nothing but a concrete mass, and, with a heavy, deep-drawn sigh, I said, 'Then there's no compound such as I expected?' when, turning the vessel, I saw a little portion of rich red fluid—all was right. I carefully set aside the invaluable liquid, and succeeded by a few hastily contrived experiments in showing that it possessed curious properties. The next point was to make a large quantity, to purify it, and examine its chemical relations. Away I went to the glassblower,

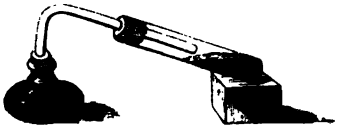
and got a piece of apparatus with tubes of longer diameter, and, on King Charles the First's martyrdom day, tried the process on the larger scale; but though I worked from ten till four in the same cold room (obliged to dip my hands now and then into hot water kept boiling over a gas-light, or I should have 'starved'), not a single drop of the liquid did I get. Then I resolved to reverse the process, and pass the sulphur over the iodine. The thought struck me about nine o'clock. I immediately got three test-tubes, one without a bottom, and tried it. I made a very little this way, and cleared out my large apparatus, which with much difficulty I did, and, sitting down next day to bore a cork for it, I forgot it was in my pocket, and crushed it to pieces.



No time was to be lost, so I fished out an old funnel, and rigged it up thus; but I only got the smallest quantity. Then I thought of a different plan, and I bought from Mr. Duncan a compound of iodine and lead, and tried it—equally unsuccessful; a compound of iodine and potassium—no better. Then I thought of getting a new arrangement of apparatus, where both should meet in a state of vapour. Whilst getting the corks ready for this, I bethought of trying with different proportions of iodine and sulphur fused together. Some dim indications appeared with a glass tube, so I fused some in a tobacco-pipe bowl, and noticing ruddy vapours, I held a glass jar over, and was delighted to see some of the fluid condensed. All doubt was at an end, and, this day, discarding all glass paraphernalia and other fooleries, I have made half a bottleful in three quarters of an hour, with an old and well-known black







ink-bottle, and a curved glass tube. In my next epistle, I hope to tell you more about this; meanwhile I am very glad, with all my disappointments and labours, to have met with some success. Enough of chemistry."

"*March 1st.*

"I am glad you were pleased with the chemical dissertations. I shall give you more of them, for I give you all credit for sympathy, but I cannot add very much definite as to results. The compound I have got is a very curious one, and throws very great light on the constitution of a supposed element, bromine, which I am at present *trying to decompose.* Mr. K. Kemp is much interested in the inquiry, but I dare say nothing yet as to the results, for they may be very tedious, and complicated processes must be gone through before any conclusion can be safely drawn. I have to regret that I must almost entirely relinquish chemistry for the next two months, to study for examinations, and revel in the delights of anatomy and practice of physic. You must not contrast your situation and mine as you do—years of labour, and months rich in discoveries. Remember that you have fairly begun, have got all the machinery set in play, which can 'lead on to fortune.' You are engaged in purely professional labours, and the result is very much in your own hands. Now, I have not even entered on the threshold of my profession. I am obliged to study what I abhor, and cannot get pursuing the branches that I wish; and even if I could, I would not, my dear brother, make discoveries so very plentifully as you think they may be made, and, like yourself, I must imperiously mind the main chance, and alchemist or no, study the art of gold-making. Don't think I am proving myself to be miserable—not at all; I'm content and willing to wait and hope the best, but the future is very dim and doubtful. . . . .

"I read, with very great pleasure and sympathy, of your kneeling at the altar of St. Paul's. I cannot understand the religion which mingles not with every act and feeling, or conceive of those who dismiss God with the morning and evening prayer, as too pure or holy for the affairs of this busy world. The busy world may perhaps be the scene of many actions

where God could not be invoked as the spectator or disposer of what was just or good, but 'an undevout anatomist,' Dr. Fletcher says, 'is a maniac;' and while perhaps the chemist has less powerfully than the anatomist the incitements to devotion, yet must he study his subject in a wrong way if he find them not. I have no altar to kneel at but my own bedside, where I have often prayed to God for you; but there I have prayed for success in my endeavours, and *there*, should God grant me the honour of going deeper into His laws than others, I would pour forth my sincere thanks and gratitude. I found a strange verse in reading over the Psalms. I have not now time to look for the exact place, but it was to this effect, that he who obeys God 'shall have the desire of his own heart.' Do look at the passage. I think it is in the early Psalms; but of course to love God should be the *primary* feeling, though the secondary 'desire' will in our minds too often supplant it. . . .

"You say the folks ask if I'm coming to town. I think you might have told me whether it was ladies or no. As to my reaching London, you know, Dan, nothing would give me more pleasure; and to spend a winter there would greatly delight me, and I'm sure I could turn it to very great professional benefit. Dr. Christison and Mr. Kemp would give me letters to Professor Graham, and I would perhaps get introduced to Faraday; also there are classes there that I cannot attend here, and I won't state any hypothetical objections, but I do not entertain a hope of being there. Had I gained that Essay, I should have come up in autumn to spend the winter with you; but I did not, and I ceased to look forward to the realization of my hopes. Further, and let this be your consolation, I would not like to leave Mary at present. Meanwhile, I shall be very busy preparing for my first physician's examination in May. I, in the midst of much haziness from dull weather, remain your very affectionate brother, GEORGE."

"*March* 20, 1838.

"I am breaking my promise in taking up a sheet of long paper, though that is but half-stating my crime, for I sent out expressly for it, that you might have no cause of complaint con-

cerning littleness of letter, and so I thought old John[1] and his concerns worthy of a long sheet. I do also think certain youngsters, who have lately sojourned with us, equally worthy of what is so justly, as I feel it, called Foolscap. This is, I believe, positively the last long sheet you will get for some time, as I have put on my wisdom-cap and taken to osteology and its delights again. I shall send you a parcel soon, and perhaps a few lines, but Mary must be your correspondent till my examinations are over. You will remember my delightful leisure when preparing for Surgeons' Hall, and excuse silence. Well; away ye bones! Have you seen any strangers floating in your tea?—yes or no? Well, whether or no, here they have come—the two daughters of an excellent old gentleman you have heard me speak of, one Hugh Mackay of Glasgow. They have spent a whole week with us, and now, after slowly becoming reconciled to the dulness which has succeeded the pleasurable feelings their presence awakened, I sit down (or being already seated, remain sitting) in some degree to call back the pleasure by recounting it to one who will believe all said, and think it too little. . . . I get on hazily with this letter; but now that I have got clear of what does not belong to myself, I'll perhaps amend. I suppose, like me, you find any little incident regarding folks or things you know about, amusing and pleasant, as disturbing the monotony of your thoughts. When I can get speculating on chemistry, I don't care for these things; but now when I dare not speculate, as I would soon leave my studies to chase atoms and the like, I am very glad of any foolery to amuse me. Well, here follow a few of the last incidents for your benefit: One night, at my only visiting place, it chanced that I asked the young ladies to sing 'The last links are broken.' They sang it, but declared that, although wearied of the words, they loved the tune, and would sing it to new words if I would write them. Accordingly they sent me the original words, and I fell to, setting James at the same time to the task. We both wrote a couple of verses. James took, as I suggested, autumn, and wrote very quickly two verses; the first halted, the second was very good, and, failing in the autumnal lines, I

[1] John M'Lure, of whom more again.

took the 'Æolian harp' and soon despatched eight lines, and sent both off with a letter. They were most favourably received, and I was down on Saturday night to hear them sung. James's did not sing well, in spite of the goodness, especially of the last verse. There was, from his almost complete want of musical ear, a certain indescribable roughness, which threw a discord over their singing. Mine own did better; in truth, they were declared faultless; and both B. and R. sung them (you know it is a duet), as they said, with great pleasure. Like Campbell, I'll squeeze them in here, as they won't take up much room; and I have a very useless head to-night; but mind you don't give anybody a copy, for I think they are the property and copyright of the Misses L——, *for whom* they were written. Only, as I used formerly, when I promised to keep a secret, to make the reservation that I should tell you; I now send you them, premising that I was restricted to two verses, that each line must have a double rhyme, and that the first rhyme must be a dissyllable, or equivalent to it. Here, then, the lines are. 'To be said or sung.'

"The deep tones are dying that haunted mine ear,
Like the summer wind sighing, when autumn is near;
When the fairies are singing along the green lea,
And bright birds are winging their way o'er the sea.

"That music revealing awhile to my heart,
Each heaven-born feeling, too soon to depart,
But awakes the desire, that so witching a strain
Should steal from the lyre o'er my senses again.

"I amuse myself in my afternoon ramble in stringing together different rhymes promised for insertion in ladies' albums, in somewhat an odd fashion. I have the three somewhat opposite subjects of a quizzing Conversation with a Skull, an Ode to a Soap-Bubble, and a Hymn on Death. They are all begun, none of them ended. Now I apostrophize the grinning cranium, now I address the resplendent soap-bell, and I again move in the trappings of woe. My mind is a mobile one, and loves the shifting. I don't hurry with the execution of these poems, as I don't care to lose the amusement very speedily.

"I will not let slip any opportunity I can improve, of writing to you, spite of anatomy, biology, and all the ologies."

"*April 7th*, 1838.

"I did not expect to have had the pleasure of writing, except, perhaps, a few lines at the bottom of some other person's letter, but I studied this last week till I gave myself a headache that drove me from the college to wander away and inhale the spring breezes.

"And this day being Saturday, and Sam Brown having come into town yesternight, I shall just take a holiday, hoping the better on Monday to assail all the recondite and abstruse subjects which must be made at present my daily fare.

"Many and many a choice thought you should have had and have lost, because, not having an amanuensis, they were all given to the winds and lost for ever; now and then only did an idea seem deserving enough of treasuring up, to be thought of a second time, and commissioned southwards. There was, for instance, a declaration of Professor Jameson, that leather, especially that from the sow's back, was of great use to 'saddlers, trunkmakers, and other *artists*,' which I thought could not fail to give you a pleasing idea of the category to which your fellow-worker and friend belonged.

"Owen has been here with his wild vagaries of a new moral world, and his living in parallelograms of harmony. D. is smitten; came to me telling that he had had very few antipathies before, but he had none now; and explaining to me how foolish and absurd it was of me to be angry, seeing the object of my anger was possessed of the character he had because society had made him so, and a great deal more in that strain. He left me Owen's book, desiring me to read it. I tried a page or two, and found it as you may imagine, just such a tissue of nonsense as Whitelaw, the vapour-bath man, wrote in his Buttercup theories of disease. You had just to change the subject-matter, and the mode of reasoning would have served either. I expounded a page to him, forcing his assent to the proposition; I built upon it, by obliging him to confess that he could not understand it, and he of course replied, in his own characteristic way, that Moses and David and Job did not know of a future world, and sundry other equally cogent arguments; and when I proceeded to prove to him that Job and his friends did, he

departed, declaring at least that Solomon did not, and so it is with him the bubble of the hour, to live till a bigger and brighter spring.

"I made a vain attempt on Saturday to write more than the preceding page; so here on Monday night, I am again doing my best to write you a few lines, though in such a state of ferment as to be unable to write anything very worth reading. In truth, occupied, as I am at present, all hours of the day except one (and meal hours), it is not very easy to shift the thoughts from the multitudinous technicalities of manifold sciences, and at once fall into the pleasing vein that fraternal love demands,—the more so that each hour given, even to the worthiest purpose, awakens only the feeling that rejection may be the result, and calls up the thousand ugly yet relentless phantoms that wait but for one moment of remorseful leisure, to rush in and overwhelm the unfortunate medico. It is not that, in an hour of leisure, I cannot turn over a merry thought, and get the good of it, for I am never merrier than in the sweet hour that succeeds fagging; but never reading anything but dry matters of medical sciences, all the fresh and juicy ideas of my brain are sucked out and expended on my own needful self, and no overplus remains to send to a friend for his help. But you must remember my former willingness to write to you, and anticipate the renewal which emancipation will assuredly bring, and in the hope of this, suffer me for a while to drink in at my studies, and afterwards you shall receive the outflow thence welling.

"I have, in spite of the narrowness of my bonds, read one interesting work, of which you have probably already heard from Macmillan, Isaac Taylor's new book on Home Education. It is certainly an extremely interesting and very beautiful book, on which this opinion, which you and I have often passed on others of his works, may be held, that, without putting faith in all his statements and views, there is a very great deal curious, novel, ingenious, and true; and few, whatever their age be, can fail to derive very great good from it. I at least have, and I am sure you will. We are both of us past the age when the Home Education he proposes should be put in force, but we are not past the age when the hints intended for an earlier period may be prac-

tically useful to a riper age; and Samuel Brown and I, waiving the application to ourselves, justified our perusal, by declaring we both proposed to be educators, meaning public teachers of science,—but I suspect Samuel might have an inward reservation of a looking forward to have a charge of Home Education in its most natural and most simple sense; I have none, but you may.

"I descend to no particulars on the system till you have read it, but I should enjoy very, very much a long talk with you over it, its benefits and the like, as we used to have in our evening walks. And this leads me to remark, that I grieve to say I cannot encourage the hope of seeing you in London this summer or autumn, and that I trust you will not either form high hopes, or, above all, deny yourself the visitation of interesting things about London with the affectionate intention of waiting for me, for really, Daniel, I know not when I shall get up. As soon as I pass my examination, which will be some time in May, I shall have to begin German, to re-study French, to attend the Infirmary, to attend (most horrible) the Dispensary,—as necessary studies and duties. Further, I shall have to write my Thesis,[1] which I cannot put off till winter, seeing I shall have abundance then to do in preparing for my second examination, with all its delights of midwifery, surgery, practice of physic, pathology, etc., etc., so that I fear, even could I otherwise reach London, I should commit an error in going, which you would be the first to mourn. I shall likely go out to Haddington as soon as I pass, but that will be a thoroughly practical journey, to have the benefit of Sam Brown's laboratory and assistance in carrying on my series of experiments in bromine, on which, if my researches are successful, I shall early publish a paper; and I shall have a very extended series of experiments to perform there, at home, and at Dr. Christison's on the subject of my Thesis; for my only hope, and it is a feeble one, of getting on as a chemist is to succeed in some projects which shall convince unwilling friends that I have some chance of success in such a profession, and this I must do before I pass as physician, for *that* consummated, I must at once begin for myself in some capacity.

[1] The inaugural dissertation required from graduates of medicine.

"I shall betake myself to the study of practice of physic this summer and next winter, and fit myself for practice when I am set afloat on the world, should such an alternative be my only resort; but what I have ever felt is, that even although I had no liking for chemistry, I should be most miserable as a practitioner, for I am neither intellectually fitted for discerning the nice shades of disease, in observing and detecting which a physician's sagacity is shown, nor am I morally formed to grapple with the tremendous moral responsibility that in my eyes hangs over my profession, and I am physically unequal and averse to the eternal trot of going rounds; and thus I feel, that if I should practise, all labour at other things is hopeless. But of course none of these are reasons for my staying to burden my father, or making greater claims on his house and purse, and I have too much pride and independence to be beholden to others for a livelihood, when I may make one for myself. I wrote Uncle A——, at mother's request, to tell him about Catherine, and as he has always been very kind to me, I mentioned cautiously my wishes regarding chemistry. He writes me back (in a very kind, however, and affectionate letter, in which he asks for you particularly), 'Respecting chemistry, you may find it more pleasing than profitable,' and regarding the future hopes I held out of becoming a lecturer, he says, 'I entertain the idea that it is but a poor profession.' The letter is, let me however say, written in a very kindly spirit, and he adds that I am better qualified than he to judge, and begs me to write him soon. You see what I must expect, and that every moment between this and my final passing I must turn to the best account. I write this neither with morbid feelings towards my profession, or towards those who do not see things as I (and you) do; they shall only stimulate me to redoubled energy; and I shall neither mourn nor repine, for I have high hopes, and not unprofitable speculations, and if God grant me health and leisure, my most urgent needs, I shall not despair. All this I write as my apology for giving up the hope of seeing you. I am sure you will agree, and we shall meet the sooner and the more honourably to ourselves, when all the sorrows are past. Don't write, unless your health permits."

"LABORATORY, *May 4, Friday.*

"My examinations are over, and *I am half a physician*, and so, five hours after birth, I am writing you the good news, knowing it will interest you. We receive our summons a week before, from a kindly wish to give us time to look over our subjects. I luckily got hold of mine at the College, so they had no idea at home that I was going up. I shall not trouble you with a recital of the toils and troubles through which I passed; suffice it to say that I began yesterday at ten o'clock, and studied straight on without stopping till three o'clock this morning, so I am rather wearied now, which is my only excuse if this letter be dull and uninteresting. I might amuse by reciting the contrivance I fell upon to keep myself awake last night. I was in the finest studying trim all day, and dreading I should become sleepy at night, I pilfered a portion of tea, kept a slice of toast, a little cream and butter, which I hid behind a rampart of books, and having commissioned Margaret [a servant] to leave the tea-kettle where I put it, I made myself a cup of tea, and got on excellently; the object of all this secrecy being to conceal my intention of going up for examination to-day. . . .

"I shall not attempt to run over the peculiarities of each letter you have sent me since I was chained to the oar, but shall only say they were great treats. I took them with me out in my afternoon walk to the Dean Bridge, and read them with much comfort and inward refreshment, and to the last of them I shall somewhat more minutely bind my attention and exchange a few thoughts, as many of the subjects you touch upon are interesting to both of us, and excellently fitted for the easy freedom of letters. Don't you fear that I will take into consideration the getting to London; if possible, I shall come, for nothing could be more delightful, and I could study excellently beside you, but I cannot say anything yet very definite, although I shall write you more explicitly afterwards. . . . Albums are the most flattering and comfortable records of poetry for folks like you and me; one is sure to please, and I should never think of writing songs did not the wish to please, or promise to fill a page, form a stimulus. Now for the story of the soap-bubble,

which is certainly, as the sternest mathematician would allow, a trifle light as air.

"Miss —— reproached me for not writing in her album. I told her I never wrote without being asked, but would willingly if she wished. On receiving it, I inserted the following verses :—

"TO A SOAP-BUBBLE.

"Bright little world of my own creating,
Blown with a breath of the viewless air,
Thy fragile form in circles dilating
Seems destined each hue of the rainbow to wear;
The amethyst's purple is given to thee,
And the ruby has lent thee its own ruddy hue,
And the emerald's green, like the sparkling sea,
Mingles its tints with the sapphire's blue.
Thou art a sun, rich in thy brightness;
Thou art a moon, silvered with whiteness;
Thou art a planet, begirt with a glow
Of colours enamelled above and below,
As only the pencil of light can bestow.

"Who knoweth now but that each starry sphere
That silently floats in the heavens on high,
Was once a gay bubble, pellucid and clear,
Before it was given a place in the sky,
And blown by the lips of some young angel, trying,—
While his close feather'd wings were yet tiny and frail,—
By other bright things, and their fashion of flying,
To learn on his own gilded pinions to sail?
For thus one by one the planets were blown,
And the bright milky way with starry gems sown.
In the ether above no storms ever blow
To crush their frail forms, or toss to and fro
Those delicate worlds,—so round in their orbits they ever shall go."

"*May* 28, 1838.

"It is now a long time, nearly a month, since I wrote you, and without the excuse of busy study to plead for silence. Not a line has reached you from me since I wrote immediately after passing. I told you then that I purposed going to Haddington, on Samuel Brown's invitation. At the time, however, which suited me best, some friends came out to see the family, and it would not have been convenient to receive me, so I was left disappointed in the very beginning of the flitting [*Anglicè*, removal]. You will not wonder that I hesitated little to accompany Mr. Mackay to Glasgow, in which place, and the

adjoining towns and the like, I have spent more than two weeks, having returned to town on Friday evening from Lanark, which I made the goal of my journey."

The day after he writes to Miss Mackay:—

"You will not doubt my sincerity, or think the less of me for it, when I say I am very glad to be at home again. I am such a slave to habits, and so easily set wrong in bodily frame, and therefore so unequal in spirits, that the change of mode of living, and the like, however slight, which attend moving about, soon discomfort me; and with much greater wish to be merry, thoughtless, and at ease, than among the grave studies of home, I am always less so; and would rather have my friends come and see me, than I go to see them. In all this, I talk of the part I play, not of that of my kind entertainers; so you are to regard this in the light of an apology for any dulness, stupidity, crossness, or the like, which appeared in me. Since I came home, I have got several new ideas, especially in geology, which I am studying, and have devised many foolish poems, quibbles, and much such nonsense, which of course evaporates away, leaving, I hope, a clear full-bodied liquor, as the brewers say, all the better, like porter, of losing the barm. My visit to Glasgow was a very pleasant one, and the source of much pleasure and happiness."

"GAYFIELD SQUARE, *June* 18, 1838.

"MY DEAR DANIEL,—Your most acceptable letter to mother arrived to-day, and the reading of the last line has set me to writing you. Think not that I have suddenly had my discernment of logic so powerfully increased, as to make the question of whose letter was last, decide my periods of correspondence; even if I had, I should be guilty, for your letter recognised both of mine, and I was inexcusable. My only excuse for not writing you, has been the apparently paradoxical one—to you, I am sure almost without meaning and weight—of having too little to occupy me; not that I have been idle, for that I cannot be, but my business has been more of the body than of the mind; more of the feet than the head. As soon as I came home from Glasgow, I knew I had to begin dispensary duties, and set

about finding one. I found the New Town one full. The Old Town Dispensary had the Grassmarket district, which they offered me; but I felt little inclined to take on me at once the onerous responsibility of so large a district, in which I knew I should be little assisted by superior doctors, but left to blunder my way on through fevers and wounds and distempers. In an agony of fright, and a delirium of suspense, fearful of committing evil, and by the very fear unnerving my hands and paralysing my energies,—in short, doomed 'to wade through slaughter to' a knowledge of practice,—and bent on learning the profession of a doctor, I articled myself to the Port-Hopetoun Dispensary, where, though their list was full, I was taken on as a subsidiary; the period I serve being sufficient to give me claims to a certificate, so that I learn and get over all difficulties at the same time. The great recommendation, however, is that, instead of being a principal, I am hooked to my good friend John Niven, with whom I every day perambulate the delightful purlieus of the West Port and the neighbourhood, sometimes steering across the 'bridge that spans' that prince of ditches, the Canal, and at other times winging our flight to the Grassmarket; and winding up all by journeying to the West Kirk Charity Workhouse, where we have charge of all the little urchins' health and welfare. So you see I am a great man in the way of practice, and not destitute at least of patients, and the means of learning that branch of medicine.

"John Niven is an exceedingly clear-headed fellow, the very opposite of me in perhaps every point and every prejudice; different in the constitution of his mind and body, different in the education he has got, and very different in his views of all sorts of matters. But he is an excellent fellow, gifted by nature with that estimable but unacquirable qualification, 'a physician's sagacity,' which, like the ability to be a poet, of which Montgomery speaks, and which you may think far too noble a thing to be placed side by side with the calling of those who 'thrust their solemn phizzes into every abomination,' is nevertheless equally the gift, I said, of nature and of God;—I mean that acute discernment, at a glance, of the state of a patient; that perception of the change of a symptom, its aggravation or cessa-

tion, which have flashed on the gifted physician and decided his practice, while the man, like me, of common gifts, is feeling pulse, and looking at tongue, and touching skin, etc., after the approved method handed down by Galen and Hippocrates to their medical posterity. One after all is puzzled to know what to think or what to do. This sagacity, which has much in it of a noble instinct, John has largely, and he has cultivated it by a zealous attendance on hospitals and dispensaries, by a generous expenditure on books and other means of acquiring knowledge, and by a hearty enthusiasm in his profession; further, he is an exceedingly well-informed person on most matters, and, though not very speculative, fond of hearing anything odd, and greatly pleased with a joke; to all this add great kindness of heart and action, invariably shown me, and particularly in this present instance, you will not think me so badly off in my daily walks; and let me say we don't always talk of medical things, of which more hereafter.

"I trot about every day from ten till two, and most tiresome it is, and when I come home, I am fit for very, very little. Up to the present time, however, I have taken geology in hand, and get on with considerable speed, and with very great delight; but I have got nothing done at chemistry. There is no room for working at home, and I cannot work to my heart's pleasure in Dr. Christison's. I must have no one overlooking, even kindly; so, up to this time, I have been miserable from want of my laboratory, and means to try, by the test of experiments, the projects of my brain. It is the disagreeable mood of mind, attendant on this state of things, which has kept me from writing, though I had plenty to say, and have a great deal more than this letter, big as it is, will hold. To-morrow sees my chemical labours begin, as you will learn before you finish this letter; but lest I make this a mere preface and apology, and because I have been wearying to say it, let me heartily congratulate you on your success. I cannot, as mother did when she read it, bring tears to my eyes; that becomes a kind mother; but a kind brother will, with exulting, joyous feelings, wish you all the comfort and happiness so auspicious an event should bring, and feel his own soul bettered by the knowledge your

letter conveyed. I am proud of you, Daniel, with your high thoughts and high hopes, and persevering laborious duties, and unresting application. . . . .

"For the present I bid you good-night, and as night brings sober, chastened, religious feelings and duties, let me only add the hope (alike for both of us) that earthly things, however noble, will not shut from our straining eyeballs the higher things which must swallow up all other feelings, when death-beds and eternities come. God bless and preserve you, my dear brother, from all evils and snares, and myself too, for I have many. Good-night."

"*June 19th.*—I do not resume with good-morrow, for night is the time with me for writing, and I have just fallen to again to your epistle. Having discoursed of your prospects, occupation, and the like, let me say a word of my own. After the first re-beginning of Dispensary rambles was fairly past, I began seriously to think of some way of getting my chemistry prosecuted, and it came into my head, as my wisest plan, just to have a room, a garret, or the like, and turn it to good account. I betook myself to requesting the assistance of some old dames to get me one. Chancing to call on Mrs. —— to see Samuel Brown, I had to sit a while, and mentioned the wish to that old lady, who immediately stalked about the Lothian Road, and such places, in search of a room. Whilst engaged thus, I called at Leith Street, and mentioned it to Mrs. ——, who at once offered and gave me her most kind and most useful assistance, for she sent me over to a pensioner of hers, a widow, who had rented a room for six months or so, but having lost her daughter, had gladly taken a place as housekeeper in a family. From her I got the key of the room, which will cost me nothing but a trifle a week to the old deaf lady who sweeps and sorts it; and will be as it is a very palace. It is situate in that strange and not very decent place of Edinburgh, Richmond Court; but, as far as I have yet seen, it is an excellent little corner, with the best window in the court. I have a goodly sized furnished room—a perfect palace of a laboratory; the window to be sure does not command a very fine view, but lets in a great stream of light, that valuable auxiliary to all sorts of researches that

don't ask the shelter of darkness. I have five arm-chairs, with flaming yellow covers; walls adorned with sewed samplers, portraits of Queen Mary and Richard Cœur de Lion, and which is a great deal better, a beautiful, unframed, fine engraving of one of Gerhard Douw's pictures, not to mention an elegant looking-glass, basin-stand, tumblers, glasses, etc.; and a press, the key of which I am promised, if I don't break the old lady's china. In short, I want but one thing, as you will be pleased to mention to ——, —a housekeeper. You would have been greatly amused at a conversation between Mrs. ——, of Argyle Square, and me. She is a kind, simple, affectionate woman; and I at once addressed her, 'Well, Mrs. ——, I have taken up house for myself.' 'Taken up house, Mr. Wilson; is it possible? You are not very old.' 'No.' 'Have you really left your father's?' 'Yes, ma'am, I have got a house of my own,' said I, adding it was 'in a retired part of the town, as *we* wished privacy;' and I explained I had been visiting it that day, getting the furniture (a few bottles) in. 'Well,' said the good-mannered but wondering lady, 'you'll need a housekeeper.' 'Of course,' said I; 'whom do you recommend?' and so on. A great deal of fun I got, laughing and blushing for the last foolish thing I did, seeing two very nice pretty young ladies, strangers to me, were listening to all this nonsense. 'Well,' says Miss ——, 'I won't be your housekeeper.' Said I, 'You might have waited till you were asked. I see there's been somebody here before me;' and ended by inviting the ladies to visit me at my private residence. Explanations, fun, nonsense, and laughter followed, and all enjoyed the joke. I told them if they knew any young heiress, wishing to be lady of a house, to send her to me; I would know the motive, and spare her feelings any questions. The promise was made. Make you a similar one. I must close this long yepistle. I shall write you in a few days, by a bearer whose face you will be delighted to see."

"GAYFIELD SQUARE, *July* 6, 1838.

"In spite of lost time from several causes, and at eleven o'clock P.M., I begin, not on short glazed paper, but on long foolscap (the foolscap seems to fit me), to write something. I

don't know what you could make of my last epistle, so hurriedly, confusedly, and stupidly written was it; and so conscious of this was I, that as soon as I wrote it, I sealed it, for fear of being tempted to look over it, and put it in the fire. Busy as I am, I have not been unforgetful, my dear brother, of your interests. . . .

"This day on which I write, Saturday morning, is very beautiful, a great thunder-storm last night having swept away the darkness and gloom and mist. I write away busily to you, intending, when done, to get my chemical labours on a bit, as the thunder-plump of last night was so severe that I could not stir out, and the day before I was almost suffocated with chlorine gas, and obliged to come home and recline on some chairs for a couple of hours; my headache has scarcely left me yet, and a snuff of the fumes brings it back, but it would never do to retreat for that. That's quite enough of a letter to be full of sense; I must now see if I have no nonsense to fish up for you, of some kind or other. I get strange visits at my Richmond Court, from friends, I presume, of the previous resident. Yesterday, a dumb man knocked at the door, and looked with amazement when I opened it. I tried to speak on my fingers, but found I had forgotten the dumb alphabet. I hailed him, and took pen and paper to write, but he could not read writing; however, he whipped out of his pocket a bit of chalk, and snatching up a black tray, wrote on it with his left hand, backwards, 'Friend of way,' which I suppose stood for my friend is *a*way. I saw him in the street, and begged the chalk to write his friend's address, but he would not give it me.

When I took possession of my royal apartments,[1] I saw lying on the window-sill one of those large buttons which livery-servants wear, with their master's crest on it. The eye being broken off, I doubted not it must be a button pitched up by some of the players at pitch and toss, this being the season; accordingly, a rap came to my door, and two laddies put their heads in; 'Will you gie's our button, Sir?' Just think of the simplicity; they never seemed to dream I could be ignorant of the place where the button lay, nor did they preface their re-

[1] A book containing notes of experiments made in them, has for title-page 'Impic Archives of Labours performed at our Court of Richmond in August 1838.'

quest by any statement that the button was theirs, that it had accidentally been tossed up there, that I would find it on the sill, etc. etc., but evincing the most perfect confidence in my universal knowledge, they at once asked for it. I thought such confidence deserved similar treatment, so I, without any unnecessary remarks, said, 'O yes;' walked to the window and got them their button.

"What a delightful walk it is round Arthur Seat! When the evening is dull, I walk through the valley and the Hunter's Bog; when anyway clear, I journey round the Radical Road, for the sake of the extraordinary view, never two nights alike, and yet always so beautiful. I wonder some of the painters don't build themselves a painting-box, as the sportsmen do a shooting-box, beside the Cat-nick: the whole line of buildings, the alternation of land and sea, are so fitted to show every charm which varied atmospherical effects can produce on a scene. If I had a son who showed any capacity for landscape painting, I would stick him up, I think, on Salisbury Crags, and disinherit him if he did not beat Turner. The scene is altogether so wondrous, so changeful in all its bearings, and so soothing to a mind busied with turning over a thousand subtle subjects, that I shall never weary of it, and probably as long as I go out to Richmond Court, I shall come home that way.

"I lately gathered some forget-me-nots, from the spot where you used to pluck them at the foot of the rocks below St Anthony's Chapel; but I was more fortunate than you, for a little boy brought me down a drink of St. Anthony's water, which, though not *dry*, I readily drank, to show him I appreciated his kindness. I lately had a visit from your pupil, M'Donald; he seems very diligent and very enthusiastic; and is a curious enterprising promising fellow, though extremely simple in his views. When he chances to be sent to any house, to look after painting its walls, or the like, he gets the servants to find out for him who painted the pictures on the walls, which he takes care to study.

"He tells me there are two unknown or scarcely known pictures of Sir Joshua Reynolds in a house in Edinburgh, representing George III. as introduced to his Queen, and his marriage.

One has not been quite finished; the figures, he says, are stiff, but the faces very beautifully painted, and said to be all portraits. In Sir Charles Bell's house, too, he saw some curious paintings. This certainly is the pursuit of knowledge under difficulties." . . .

To Miss Mackay.

"*July* 21.

"I daresay you have thought the old Scotch proverb, 'Out o' sight out o' mind,' completely verified in your case, seeing my promise to write a second time has never been fulfilled, and no reason for silence given. I can only say in excuse that if I have not written you, it has not been because I have been writing others, for except to Daniel, I have written but one letter (No. 2) since I left you, and if I have thought by chance for a few minutes of ladies, as ladies, you have had a very large share of those very rare thoughts. In truth, I am at present from 9 A.M. till 12 P.M. completely occupied; one half of the day with Dispensary duties, the other half with chemical and literary labours. It is not, however, the actual occupation of time that has stopped my pen; but the mood of mind engendered by chemical speculations excludes almost wholly other thoughts. I am devising, suggesting, experimenting, breaking glass vessels, and melting, and fusing, and evaporating; and when I am doing so, and I am thoroughly possessed with the idea, I don't care for anything else.

"I am no longer able to afford myself the hour's walk at three o'clock, which I spent in traversing Princes Street, and walking out into the country. I never see ladies now, therefore, even on the street, except when hurrying home from Dispensary or Laboratory, and so I am more and more every day losing any opportunities (few at best) of gratifying the passion for seeing pretty faces; though now, often hurried as my glimpses are, I see some forms and countenances I cannot easily forget. I saw the lady that's like you to-day, with her lame and very interesting looking friend; I have seen neither for a long time. I looked on them as friends and felt quite pleased, for I had been looking in all quarters for them in vain, for some time. I

have lately got acquainted with a new face in the street, a very interesting one; I would give a great deal to know its possessor. I am sure she has come lately to town; she is young, florid, with regular, good-tempered, but dignified features, and something very pleasing in her appearance. I cannot get out of my head that I have seen her before; at any rate she is very like a particular friend of mine. I am determined to find out who she is, and I am likely to succeed, for I found out a lady's name, etc., lately, after a three months' search, at the time I told you of having met her at the Exhibition of Pictures. I had, however, seen her often going to school before, admired her eyes and forehead, and was tormented about her. However, in spite of these annoyances, and to the great amazement of my friends, I made a point of asking at every house I was in the practice of visiting, about the lady, whom I described to the best of my ability, from the contour of her form to the material of her gown. The ladies of the families where I inquired kindly assisted me; three families in the south side who have a very wide circle of acquaintance, lent me their aid. One gossiping widow, whose room commands one of the most famous streets for belles in Edinburgh, went over the inhabitants of every house, commenting on the ages, sizes, accomplishments, and the like, of all the female intellects, and opinion was divided between a great tobacconist's and a jeweller's daughter. However, I would not believe she was either; and in spite of the assurances of a friend, a young Secession student and a great beau, that she was the daughter of a gentleman in Leith, I persevered in my scepticism, and at last learned who she was—but you don't deserve to know, and I'll not tell you any more. However, I'll immediately set an inquiry afoot about this other lady, who is a far nicer one than the former.

"I have a goodly set of duties, like those you voluntarily impose on yourself, in the visiting of patients, having the famous or infamous district of the West Port for my share of the town. I see queer sights and queer things, and am amused, and grieved, and made indignant, and rejoiced, and wearied by turns. I shall be glad, however, when the work is over. With visiting and chemicalizing all day is spent, and evening brings a recurrence of either or both duties, while new ones are added. The

present is with me a season of labour, whether or not to purpose has yet to appear; I mention so much to excuse the matter-of-fact tone of this epistle."

To his brother he says: "I have been very much shocked to hear that Dr. A. B. is dying of consumption. Poor fellow! he seemed to be going on so prosperously, and now to be stopped by that cruel disorder. Daniel, be warned; remember you are drawing on your capital of health—hoping afterwards to refund it—but remember you have no means of ascertaining the capital you possess, and may find yourself in irretrievable bankruptcy. You will say, 'What can I do?' Well, I can say nothing, only don't let ambition conceal herself under other titles and mislead you. Both you and I are in perfect health, but we have nothing above present wellbeing in the least to look to, and I fear you are not sufficiently alive to the risks you run in working so hard. I beseech you, for the sake of yourself, and of every one who has an interest in your welfare, if possible, walk at least two hours every day, an hour morning and afternoon, and see that your room is as well ventilated as possible, and as little confined as may be—that at least you can do. I assure you, the tears come to my eyes when I think of you working at that rate, and I dread the consequences. I don't consider you an invalid; I only fear the results of the life you lead. If you have thought my previous remonstrances unnecessary, take a warning by poor B., who has suffered from working too hard. If in all this I have done nothing but awaken useless fears, forgive the imprudence of a brother's love, who has learned from the sad records of his family and his patients, that it is more easy to prevent than to cure.

"I said I did not know when I should be up at London, but since I wrote circumstances have occurred to change my intentions, and I think I shall be able to spend the month of Octo ber with you. I don't think I can get away sooner; perhaps I may, in the end of September. However, meanwhile believe me, your affectionate loving brother, GEORGE.

"*P.S.*—Now, Daniel, my head's hazy, or I would write more, but my heart opens up at the idea of seeing you again. I have not

a friend like you, and what a host of things I have to tell you, that could not be written, with divers funny jokes and the like, which the occasion no doubt will inspire, and as I'll not bring any of the chemical stuffs, you need have no fear of your nose. I'll bring Euclid, and get lessons in Mathematics and Algebra. I have left mother laughing at the idea of studying Mathematics with you. She sends kindest love, and requests as the greatest favour, that you will conceal no difficulty from her. My head yearns for the pillow, so good-night."

"*7th August* 1838.

"Mother gives me this paper, as 'small paper;' it looks very large, however; nevertheless I'll try what can be done in the way of filling it.

"Your letters and their bearer arrived safely, three days ago, and we have all been feasting on them. The description of London is exceedingly enticing and amusing, and all the motives for visiting so goodly a metropolis, weigh well in my mind to urge a visit; but my main object in coming will be to see you and spend a while with you, my dear brother and best friend. I can now speak a little more confidently as to when I shall come up. I am at present the only student in the Dispensary. I shall have heavy and responsible duties till the end of August, when my time expires.

"I shall hope to spend a part of September and a bit of October, perhaps the whole of it, with you, and surely that would satisfy you. Tell me, when you write, very particularly about the arrangements you propose, mention the expenses and the like, and I'll get all put right in time. I shall haul up with me some books, and study beside you; however, we'll not say much about the study.

"I am going to publish a paper in one of the Journals, on a new exposition of a chemical law, which has been debated all over Europe, and argued one way and another, without any one being able to prove which of two opinions was the true one.

"While engaged in a wholly different inquiry, I made a little discovery which threw some new light upon the subject. I was confined at home two days unwell, and tried an experiment or

two, which proved my views, and, in short, before the week was done, I had proved my point, beyond the possibility of contradiction.

"Samuel Brown recommends me to speak to Christison to get it put in the Royal Society's Transactions. I intend doing so to-morrow. I was only kept by a dread of seeming to overvalue the matter, and especially by an unwillingness to seem courting patronage; but I'll see him, and be guided by his conduct to me.

"I am extremely tired and sleepy, so excuse the remaining blank paper."

An extract from a letter to his sister gives a specimen of his medical practice and its unwelcomeness to his tastes.

"MY DEAR MARY,—You should long before this have heard from me had not a succession of engrossing cares so occupied my time, that it was impossible for me to do almost anything. John Niven left me last Monday, and now I am relying on my own resources, and fighting away most horribly, at the Dispensary. I purposed writing you two nights ago, but on the morning of Wednesday, I was awakened at six o'clock, and hurried away to the Dean Bridge, to see an afflicted woman; all day I was kept running after her, and night brought me no rest, for I was liable to be summoned at any hour. I lay down on the sofa, wrapped in my Mackintosh cloak, a little Camlet covering of James's on my feet, my head being cased in a good white cowl; but I soon got cold, and I whipped off my boots, and laid me without undressing under the bed-clothes. This was at one o'clock. I slept ill, thought every minute I was hearing the door-bell ring—started up, and awoke fairly at four o'clock—fell asleep again, and awoke finally at six—dressed, read till breakfast, and then walked out to see my patient, to find my trouble misplaced, seeing they had called in another doctor, as they did not like to send to such a distance. A wee bairn's voice was the first thing that saluted my ears, and I saw its little red face peeping from below the quilt. The mother's name was Mrs. King; and willing to prove my skill in logic, if not in physic, I observed that a King's daughter must be a

Queen, and therefore the child's name should unfailingly be Victoria. The good woman smiled, but I'm not quite sure that the logic told on her. The upshot of this *childish* story is that neither that night, nor last night, which was its successor, was I in an epistolary vein. You may well suppose I was very thankful to get to bed soon last night; in truth I could not fall asleep, for felicitating myself on my good fortune in not having to sit up or tremble in fear of a knock. In real earnest, I spent twenty-four hours in a state of the most miserable solicitude and timorous apprehension, prophesying for myself I know not how many unwelcome things, and quite unable to rest at anything. I was never made to be a physician, and I'll never, I do believe, try practice again.

"I'm much delighted to think you are beside Miss Campbell. I pray thee, Mary, question diligently anent our genealogy; I have a very particular reason for wishing to know our lineage. I know that Highland lore is more concerned in tracing out the lateral ramifications, and interweaving families of this Ilk with families of that Ilk, and goeth seldom up to the stock, whence the sprouts have budded; but if you can get our lineage some good way back, either among the Campbells, which I suppose is the only chance, or among the Wilsons, which is a doubtful clue, I should be greatly pleased. Follow it up to Adam, or as near as you can, unless midway, about Noah's time or so (*N.B.* —not Noah Webster's time), you find out some vagabond who was hanged, drawn, or quartered, or who hung, drew, and quartered some one else; there you may stop and take a rest, and we'll refresh ourselves about the scoundrel's prowess. In serious verity, I would willingly believe the rumour that the Wilsons are of Danish extraction, and swear that my veins throbbed with the blood of Hamlet, but that good prince having died without issue, leaves me in an awkward dilemma, and forbids that line of descent. I'll be satisfied if you trace up any of the branches; the Campbells surely can be linked on to the Duke of Argyle, and that may do for them."

On September 11th, the final arrangements for visiting London are announced:—"You will be surprised not to have heard

from me before this. I have waited to be able to tell you everything as definitely as possible. Mary and Jeanie are now home, both looking a great deal better, and in all respects improved. Their arrival sets me free to set off when I choose. Now, I am not coming up directly by one of the Leith and London steamers, but by Hull. I shall arrive there on Sunday evening, stay all night with our old friends, leave on Monday morning, and be in London on Tuesday afternoon or evening. . . . I am in no mood for writing, have been so knocked about, have so much to do, been so late up, and am so sleepy, that I shan't write a word more. Everything it is desirable you should know, I keep for oral communication.—Believe me your very affectionate, loving, sleepy brother, GEORGE."

"GEORGE INN, HULL, *Monday, 17th September.*

"MY DEAR MOTHER,—The best of friends are often bad advisers, and so it has proved in my case; for the 'Innisfail,' instead of arriving in Hull on Sunday at twelve o'clock noon, did not get in till one o'clock at midnight of Sunday, and nobody got ashore till this morning.

"On Saturday, up to eleven o'clock P.M., when 'I turned in,' the weather was most delightful, and the voyage in all respects very pleasant. I did not fall asleep for an hour, and then I tumbled over into a doubtful snooze. I believe there was a sensitiveness among all present to any alarm, from the late accident on the station; and, accordingly, when the engine stopped at two o'clock in the morning, I and many others awoke. I did not know what hour it was then, and being aware that a gentleman and lady were going ashore at Scarborough, I thought it would be the boat stopping to let them out. One of our number, however, got up and went on deck, and learned that some pin in the engine had broken, and caused the stoppage. However, it was deemed so trivial that he went to bed again, and we began to talk about steamboats and accidents, and the like. Now, you must notice that I slept in a room containing four berths, three of which were occupied by Englishmen, the fourth being occupied by your Scotch son George. I was soon embroiled with the whole three about the nature of the last

accident: and when I pushed one of them too hard, he began his speech by telling me, that 'we in arguing in *England* do so and so,' implying a full anxiety to show he knew my nation, and hated it. However, disregarding the taunt, I baffled them all, and was not a little amused next morning, when a surgeon of dragoons, who had lain in some corner or other within earshot of us, remarked to one of them on the amusement he had had listening to our conversation, adding, 'There was a great deal of eloquence in it at times.' I take the credit of all the eloquence to myself, the precious triumvirate can divide the remainder of praise among them. I and the surgeon enjoyed a laugh at them afterwards. All that is episodical. After talking a while, I thought I heard the steam cease blowing, which is always dangerous if the steamboat be still, and I immediately dressed and went on deck. The steam, however, was blowing away all right, but one of the engines was completely maimed. The whole crew were at work unshipping the broken engine, a work of nearly two hours, during which time we were lying off North Shields, on the Sunderland coast. The night was most beautiful, the water as still as a mill-pond, which was well for us. Had the wind blown hard, it would have been scarcely possible for us to have managed; and had the gale blown on the shore, nothing could have saved us but casting anchor, which cannot always be done on these coasts. As it was, we not only lost two hours in absolute inaction, but being palsied of one side, we could only creep along at five or six miles an hour, so that it was one o'clock last night before we reached Hull. One of the many pigs which we had on board walked overboard in the confusion, and was to be heard squealing at a distance. A boat was sent in pursuit, and I had an opportunity of seeing verified two truths sometimes doubted. A foolish prejudice prevails that swine cannot swim, but cut their throats with their feet; but this pig, I assure you, swam, and well too, —so well as to be nearly a mile off. What was its exact object in going over, has not yet transpired. Whether it had been exhausted with its exertions in the way of squealing the night before, and wished a cold bath; or mistook the English coast for its own beloved Irish coast, and was journeying homewards,

as it thought; or possessed a devil, like the sacred swine of old; or purposed ('awful thought') to commit the crime of *sowicide*, I cannot say; but so fervent was its love for the 'deep, deep sea,' that it sprang from the embrace of the loving mate into the wave, and was only secured after a gallant struggle.

"While the boat was setting off, I saw the other curious thing I referred to,—the phosphorescence of the sea, which I have so long wished to behold. Nothing could be more beautiful. In the wake of the boat was a line of the most delicate pale green light, speckled with stars of a darker green, while each dip of the oar broke the wave into the most beautiful scintillations. I walked the deck till five A.M., and having no fancy for being 'laid on the shelf' again, I wrapped myself in my cloak and greatcoat, and laid me down on two chairs, where I brooded till seven, when I washed and redressed, and was among the first to gain the quarter-deck. 'Twas a most queer sight the cabin at rising time,—here a cowl was popped up, and there a long thin shank came delicately over the shelf's edge; and such unbuckling of boxes, and bags, and portmanteaus, and hauling out of razors and soap-brushes, and combs, and the like; for my part, thinking it right to '*rough it out*' at sea, I kept my beard on; and thanks to the goodness of an excellent old man, who gave me, unasked, a hair-brush, when he saw me stroking my head with my fingers, I was able to make myself comfortable. 'Twas a sorrily kept Sunday yesterday. I saw only the old gentleman who gave me the brush take out a small Testament, when he got up, and read a chapter to himself. He then offered it to a tall, old, military-like man, whom I suspect to be an East Indian general or the like. Nothing could equal the wonder, and fierceness, and politeness of the refusal. He seemed amazed that he should offer that to him (doubtless an Episcopalian, for he was afterwards hoping he'd be in Hull in time for evening prayers); angry, because it was an implication on his impiety; and polite, because it was kindly and simply offered. When I heard the repeated refusals of the old gentleman, it quite overcame me, and I laughed long and loud. It was without comparison the most lovely day I have seen this summer: the sun shone out

without a cloud to dim his brightness; the sea was literally covered—studded—with vessels; and the low undulating coast of England, with here and there a picturesque windmill, and the like, was seen to the highest advantage. My animal spirits quite overflowed. I lay stretched at full length on a locker, indulging in the most blissful reveries. I did not go to bed last night, but lounged on the sofas, and laughed almost to suffocation at the old Indian general who lay next me, popping up his head and muttering the oddest oaths."

CHAPTER IV.

RESIDENCE IN LONDON—DEGREE OF M.D.

"In this theatre of man's life, it is reserved only for God and angels to be lookers-on."—PREFACE TO BACON'S 'Advancement of Learning.'

IN the renewal of the joyous companionship of former times, the brothers were truly happy. "I can't tell you half what I have seen," George's first letter to his mother says. "I've been at the British Museum, and gazed with delight on the splendid fossils, the huge crocodile-like monsters of the ancient deep, and one specimen I wished you had seen of those marks of beasts' feet which you used so much to laugh at. . . . I called on Professor Graham, and received a most courteous reception. We talked together for an hour and a half. I told him some of my speculations, and he smiled, as all older and wiser heads always do. I was invited to come to the laboratory whenever I listed; but the distance is tremendous, at least six miles from Daniel's place."

About a week later he tells her, "I have visited Westminster Abbey since I wrote you last, and strolled through that magnificent pile. Daniel and I were fixing on the corners we should lie in when we are buried in that noble sepulchre. Daniel's steps led him to a wide but gloomy cloister; mine were long arrested at the small tablet raised to Sir H. Davy's memory It's a shame, a shame!—that's far too feeble a word—it's a poor piece of very mean feeling, to see in Westminster Abbey enormous piles of marbles, pyramids bolstered up by all sort of extravagant allegorical figures, raised to the memory of soldiers, many of whom were but the obedient servants of accomplished generals, while Davy has but a little corner of one of the subsi-

diary chapels, and neither figure nor allegory! His birth, his death, his name, and a few words more, cover the stone; not that any pile would have made him more noble, but it would have shown a wish to ennoble him. What, after all, is fame? The man who walked with us, pointing to Sir H. Davy's tomb, said, 'See, sir, he was a Baronet.' That was all the merit he had in his eye. Fame is a bubble; but, like the soap-bell, it is a beautiful one painted over with very bright hues, and arrayed in most enticing colours. It may burst in the grasp, but it is beautiful till it hath burst.

"Were you to wander along the streets as I do, finding abundant occupation and pleasure in watching the flood of faces that rolls past, you would be at no loss to guess the subject of each one's thoughts. Business—business—business, is written in letters of black, with squaring of red, on each ledger-like face, with pens—seemingly steel-pens, to judge from the lines they leave on each shrewd countenance. Yet is this stir of business healthful and exhilarating! 'Tis true they are worshipping Mammon; yet are they putting forth great mental energies and much talent, and power is to be respected, for whatever ends it works.

"I dined last night with Professor Graham, and I spent a very happy evening among a circle of young chemists. I stayed behind them all, and had a long talk with him, from which I learned a great deal. I did not get home till one o'clock, so great are the distances."

"I am afraid I shall not see Faraday. He's not in town at present, and his lectures are not begun; nor shall I be present at a meeting of the Royal or any other of the Societies. This is just the worst period of the year for all these things. Some of them begin in November, the majority not till February, the beginning of the fashionable season, when the titled people return to town. I must, therefore, depart without seeing these men and things. Yet there is still a chance of seeing Faraday; but I fear none of beholding the Queen."

Of this period Daniel says,—"My lodgings were then at the extreme eastern verge of London's suburbs, in the village of Stratford-le-Bow, on the borders of Essex, into which we occa-

sionally rambled together; to Westham, where an introduction had procured us a friendly welcome; and to Barking, through the marshes, and so to the Thames dykes, where a steeple-chase was long cherished by him as a favourite jest against me. Rambling on a holiday we had made for ourselves, through that strange, Dutchman's corner of merry England, lying below the level of high-water, with river-dykes, sluices, and other features, then as foreign to our eyes as any Dutch canal scene could be, we spied a steeple in the distance and gave chase. Already we had got a peep at some of England's lovely little parish churches, and here was another chance; but to make for it as the crow flies could only be done by a crow or a duck. Carefully navigating our way by means of dykes and hedgerows, at length we reached the banks of the Thames, and found the great river was between us and the object of our desire; but we had gone too far to be baffled now. After waiting and longing, we at length succeeded in hailing a boat, got into it, and, as we rowed across the river, the boatman was drawn into conversation about the church, its name, its history. 'It was an old one?' 'Oh yes, it was an old church.' 'Very old?' for, as we drew near, we began to suspect that distance had lent a little enchantment to the view. 'Well,' said our ferryman, 'he did not doubt it was well nigh fifty years old!' which was probably a very accurate guess. It turned out to be about as plain a red brick meeting-house, with square belfry at its end, as ever village bricklayer designed and executed. But we enjoyed our ramble on a clear October day, making up for the long interval since our Edinburgh country walks, by many a reminiscence of the past, and so beguiled our walk to another ferry and home. Epping Forest was reached by a similar ramble, and George's imagination excited by the romantic encounter of a small encampment of gipsy tinkers with their donkey and covered cart. The season, however, for wanderings in the green lanes of Epping Forest or the Essex marshes was soon at an end, and time was valuable to both of us. The wonders of London, however, were an inexhaustible delight. Westminster Abbey, St. Paul's, the Tower, and all other lions, were thoroughly and lovingly explored; the British Museum was a never-failing resort;

and through the kindness of our old schoolfellow, Adam White, it was as free to us on private as on public days, and the reading-room of its library became a favourite resort of both of us when we could spare the time. Nor is it to be doubted that both the Temple and the India House were visited for Charles Lamb's sake."

At the close of a month, when about to return to Edinburgh, the offer of a place as unsalaried assistant in the Laboratory of Professor Graham, now Master of the Mint, but then Professor of Chemistry in University College, caused a complete change in George's plans. The advantages it offered were too great not to weigh strongly with him, as in no place in this country could better opportunity present itself for acquiring a knowledge of analysis and the other branches of Chemistry. He wrote to consult friends at home, saying to his mother—"I will not make a vain parade of the grief my non-return will give me. A thousand links of the dearest kind which nothing here *can make up for*, draw me to Scotland and Edinburgh; but you, I am sure, would be the first to say 'go.'"

The week of suspense caused by the tardy postage of those days was happily ended by the receipt of the desired permission to remain; and a few days later found him settled at work, and reporting to the home circle—"I have not completely recovered my chemical vein; besides the dissipation of thought which occurred during my idleness here, the long distance I have to go every day, and the consequent fatigue, as well as the unsettled nature of my views yet, have hindered me reacquiring the thoughts which were my summer companions. . . . Let me say a very little of the Laboratory and my companions there, as you will be anxious to know with whom my days are to be spent. I have at least entered on my labours with the best wishes of my preceptors and fellow-labourers. Both Mr. Graham's assistants, Mr. Young[1] and Mr. Playfair,[2] are glad of my addition to their number, and give me all the assistance in their power, and as they are both good practical chemists, and Playfair a geologist, I hope to profit by their society."

[1] Mr. James Young, Bathgate Chemical Works.

[2] Dr. Lyon Playfair, Professor of Chemistry in the University of Edinburgh.

After naming pupils in the Laboratory, he goes on to speak of "an odd little mortal, a sort of apprentice, who does the dirty work, cleans the bottles, etc., a poor friendless orphan, aged fifteen, who never learned anything but his alphabet. He has contrived to teach himself chemistry most thoroughly, and with few or no encouragements has attained (no difficult thing, as I know) to love it too. He is a very obliging, good-tempered, happy little fellow; has taken a fancy for me, and I for him. I shall certainly help him every way I can, and he says he will do anything for me. I shall immediately begin at his own little cell some of my old things, as I shall not have, or wish to have, at home any convenience for such things."

Among the students in the Laboratory that session was Dr. Livingstone, now distinguished for his labours and discoveries in Africa. On the return of the celebrated traveller to this country a few years ago, it was a pleasure to him and George to renew their previous intercourse. A much prized copy of his travels bears the autograph inscription, "To Professor G. Wilson, with the kindest regards of his friend and class-mate David Livingstone." Letters from the rivers Shire and Zambesi have come to this country since George Wilson's death, in which Dr. Livingstone speaks of specimens intended for the Industrial Museum of Scotland. "I have collected," he says, "some little things for you, but they are really so rude that I have doubts whether I ought to send them. The mill for grinding corn, for instance, is a great block of stone with a hollow worn in it of about three inches in depth, and the mortar, exactly like the Egyptian, is about the size of a man's body. A web in process of weaving, is an uncouth affair, as indeed everything here is. They have not improved a bit since Tubal Cain, and those old fogies, drove a little into their heads. Such as they are, however, you shall see them some day." How much these and other gifts mentioned in the letters would have delighted the Director of the Industrial Museum, we can readily imagine.

Some of Daniel's remembrances are amusing. He says—"At an early stage of George's London wanderings the unfamiliar face of Charles Lamb's India House led him strangely astray. His connexion with Professor Graham's Laboratory

necessitated a daily walk from my remote suburban quarters, through the City, to Gower Street. But at that time the vigorous and enthusiastic young chemist thought little of a walk, through Mile End, Whitechapel, Cheapside, and Holborn, with such a goal in view; nor was it easy to wander, where the road was straight and well defined. George, however, was not more remarkable for his singular memory of every face he ever saw, than for his utter want of what phrenologists call *locality*. He would persist in taking short cuts on his way to and from Gower Street, in spite of all warnings, and was picked up after pursuing his devious track in far-away unexpected nooks, such as only those who know the intricacies of old London's back streets and lanes could conceive possible. Warned, however, by such dear-bought experience, he resolved on contenting himself with the plain long road, steering his way by well-known landmarks, which even his untopographical head could appreciate. Guiding his way accordingly by such means, as he explained to me afterwards, he wended his way eastward one afternoon. St. Andrew's Holborn, Field Lane, St. Sepulchre's, and the Blue Coat School were all safely passed; the Post-Office and St. Paul's were glanced at, in emerging from Newgate Street into Cheapside; and,—pursuing his course steadily onward,—the portico of the Mansion House was next noted, as the mariner satisfactorily descries a guiding landmark or lighthouse—so far all was well. But coming soon after upon the portico of the East India House, in Leadenhall Street, George pulls up in sore confusion: 'Why,' said he to himself, 'where can I have been wandering to? I passed the Mansion House not long since, and here it is again!' So to put matters straight he turned up Bishopsgate Street, and started with renewed energy on a road which, if pursued far enough, might have landed him in Edinburgh, but could never have brought him to his desired haven. After getting ever more and more perplexed, he had recourse at length to that unfailing remedy for such a dilemma, a hackney cab, and was comforting himself over a favourite passage in Foster's essay on 'Decision of Character,' in which the author laments the want of a parallel resource for the undecided man—when, feeling for his purse, he found he was moneyless! The cab was

only intended to put him in the way of the Bow omnibus; but that would not do now; and I well remember the eager head out of the cab window, as he at length caught sight of me on my way to meet the absentee, already long after his time. A few such incidents, added to the unreasonable length of the road, led to our changing our quarters, and we set up our abode in Great Clarendon Street, Euston Square, where we fell into the hands of the Philistines, and got initiated into some of the mysteries of London lodging-houses, which furnished materials for many a joke at a later date, but were serious matters at the time, when our purses were fully as light as our hearts.

"We did not fail to make good use of some of the great London sights of that time: its picture-galleries, museums, cathedrals, etc., and among the rest, I do not think that George ever repented of having availed himself of the opportunity of witnessing some of the wonderful reproductions of Shakspere's choicest dramas, with which Macready was then delighting the London world at Covent Garden; nor of his first peep at a pantomime, brought out with all the glories of a London stage, and which he enjoyed with a mirth as hearty and unrestrained as the happiest child there. 'Peeping Tom of Coventry' was often afterwards laughed over, and furnished illustrations, both grave and gay, in writings of a later date. Such pastimes, however, were only the rare relaxations of an exceedingly busy and happy season."

Further details of Laboratory duties are given in writing home. "I go to the Laboratory at nine o'clock, and do not finally leave it till five o'clock. Long as these hours are, they are agreeably broken up: thus, at eleven o'clock, I go in to hear Mr. Graham's lecture; at two I go home to dinner, and at five I leave finally. Three days a week there will be a practical class, where I shall have to assist, so that there will be no room for wearying. You will observe I am never more than two hours continuously at work: at Dr. Christison's Laboratory I was often four or five, and as many at Richmond Court always. My lodgings are at a mile's distance from the University, so that I shall have a comfortably long walk, to and from my working place, twice each day.

"We have just learned to-day that Mr. Graham has obtained the gold medal of the Royal Society, endowed by George IV., for the best papers in the Philosophical Transactions. Everybody was coming in congratulating us on our master's prize.

"I think I referred, in my last letter to you, to a young boy who was in the place—a friendless orphan of fifteen, who learned nothing but his alphabet from others, but has nevertheless contrived to make himself a thorough chemist, the best I know. There is scarcely a fact, however out of the way, he does not know, an experiment he has not tried, nor a subject on which he cannot give you something. After slaving all day at the laboratory, cleaning bottles and such things, he goes home to a miserable dreary garret, where he falls to his own labours, and works away at the science he loves. He is a most striking instance of the pursuit of knowledge under difficulties, and that you may keep in remembrance one of whom I shall likely speak often, I add his name, William Saunders. I shall probably work with him, repeat some old inquiries, and engage in new ones, but of that more hereafter. . . . .

"I hope Jessie and Jeanie were satisfied with my extremely hurried notes, especially as I wrote them before I got Jessie's at all, which tell her. They must write me now and then, and so must all of you, when you can. I shall live upon my Scotch letters, as I know so very few people here. I cannot find pleasure in visiting.

"I shall stop here, promising you a larger epistle the next time, if I can spare the time; but considering the multitude of those I must write, you will be merciful, and be sure I cannot make more evident, or feel more towards you, the affection of a loving son, than I do now that I am for a period a stranger."

"I shall not send any papers to the journals, so do not look for such things; my Thesis must be my first labour, and till that is done, every other subject must be laid by. Nor is it likely I should write if I had the time, though I have many things in hand; I am more anxious at present to be a learner than a teacher, and still look to more profitably extending science

hereafter, by storing myself with all the truths it has already gathered.

"Mr. Graham is an excellent teacher; so well versed in his subject, and so earnest in displaying it aright, and in impressing it on his audience, that the hour of lecture speeds very rapidly away. I cannot make intelligible to any of my non-chemical friends the nature of the inquiries he is pursuing, except perhaps by saying, that he is prosecuting the study of the 'Laws of Combination' between different substances.

"Another assistant, as well as I, is working at his subjects: the other pupils, four in number, are labouring for their own profit. We have at last succeeded in getting a corner apiece in the Laboratory; before this desirable arrangement was accomplished, we were always in each other's way, and half the analyses were ruined in their middle stages by the carelessness of some one else than the experimenter. It would often have been amusing had it not been very provoking, to return anticipating the progress your analyses had made, and find your vessels, materials, ay, everything gone,—some other philosopher having found a use for your apparatus, and not troubled himself to inquire whether the vessel and its contents were precious or no. That is past, and it is now death by law to meddle with anything on another's table. Suffocation in the laughing gas is the method proposed for the infliction of capital punishment.

"So much, my dear mother, for my weekly employments. I had intended writing you at length on the system of church worship here, and I shall do so yet, at some early period. Let me only tell you that I came up to London embued, in spite of my love for Episcopacy, with the idea that a pious, sincere, simple-minded English clergyman, was a very rare thing. I was most agreeably disappointed. I have now heard a great number of the London ministers, and can assure you, that in meekness, simplicity, and earnestness of purpose, they cannot well be surpassed by the ministers of any denomination, and I should feel that I praised any denomination amply if I said its preachers equalled them. My love for Episcopalian form of worship is a love in the abstract; that is, I love the system of bishops, archbishops, and the like, I like the solemn simplicity

of their prayer-book, and I am delighted with the beauty and aptness of the musical part of the service. But I do not meddle in the least with Church and State questions, nor do I care for the party interests of the body; I attend the Church of England, because it seems to me to conduct the public worship of God in the most befitting and devout way. There are doubtless some wrongheaded men in the body; probably not a few in so large a hierarchy; and I could tell of the amusing ingenuity of a vicar S. has been telling me of, who went out to shoot snipes in the snow with his equally white surplice on, so as to escape the observation of both the feathered and unfeathered bipeds, who might have made a bad use of their observations. But putting such cases aside, I am sure I shall convince you that the great majority of the preachers of the English Church are excellent men, and I know I can write you freely on this topic.

"I shall forget nobody at home, not even the little (query little now?) black cat."

However the head and hands might be filled with plans and work, the heart had still room and to spare. To his sister, the juvenile chemical assistant of previous days, he writes,—"I daresay you are now so completely taken up with your studies (do they deserve that name?), chattering French with the little foreigner, or playing the piano under the watchful eye, and still more fastidious ear, of Miss M——; or engaged in the intricate meshes of a sampler stitch, slipper pattern, or the trying difficulties of hemming a shirt-border straight; or some of the other important duties which wise preceptors require from youthful disciples,—that you have clean forgotten, in the whirlwind of cares, that any such a brother as George ever tormented you. Well, for any good you will get by reflecting on the foolish words and deeds of that brother of yours, you may as well dismiss the recollection of his existence; yet fain would he keep a place, even in your little heart, which he hopes possesses an 'apartment unfurnished,' and therefore fitted to hold him, his laboratory, bottles, bluelights, nonsense and all."

A difficulty was found in obtaining scientific works, the library of the College being only for consultation, and the store

of his fellow-workers too small to last any of them long. He requests, therefore, that his own be sent up, averring that otherwise he will perish of mental starvation, and when the *meta*-physicians hold an inquest on him, they shall find the organ of the mind shrivelled into nothing. Apparatus, too, he finds necessary to carry on experiments for his Thesis, which must be ready before April. Apparatus of all kinds being expensive in London, he requests that the "corners" in the box to be sent from home be filled with "the best of his bottles." The subject of his Thesis was 'The Existence of Haloid Salts of the Electro-Negative Metals in Solution;' and shortly after this the parlour of the brothers was amply stored in all available corners with test-tubes, bottles, spirit-lamps, and solutions, which their little Welsh landlady was trained and lectured into leaving untouched, whatever amount of dust might accumulate on or around them. The comparative leisure of the Christmas recess was eagerly seized to help forward his own researches, besides working with Dr. Playfair at having some salts crystallized for Professor Graham, and ready against his return to town. On the day preceding Christmas day, he was surprised at the unusual condition of the laboratory. "I found it," he says, "in a sad mess, a furnace knocked down, and a crew of bricklayers at work repairing it, while a couple of blacksmiths set my teeth on edge, and wounded my musical ear, by filing and hammering at bars of iron. To add to the confusion, a whole bevy of those water-nymphs called charwomen, had taken possession of the place, and had made themselves quite at home, presenting a spectacle strange to a chemist's eyes, and according ill with the usual accompaniments of a laboratory. On a fireplace, sacred hitherto to crucibles and retorts, and glasses redolent of fuming acids and most potent but unpotable fluids, stood a coffee-pot, wherein was simmering the aromatic infusion which charwomen love. A jug stood by, to refresh those who preferred the more common beverage of tea, while in a pail, near the water-cistern, were lying some roundish red bodies, which, after considerable hesitation and rubbing of my spectacles, turned out to be—potatoes. Articles of domestic comfort are rarely found in such a workshop as ours, and excited my suspicion that more valuable creature com-

got the long letter first, and not anticipated another very soon after, the brief note and the verses (written during Christmas) would have borne some value, instead of coming as a mockery and a disappointment. And we seem destined to as long and as provoking a delay as you were, for no tidings have reached us of the books, and how or when we shall get them I don't know; but do not say anything about it—it is the stormy weather and nobody that's to blame. I'll be in the City on Monday, and shall learn about it then, I have no doubt. Meanwhile, although neither you nor I have read (I have not) the Queen's Speech, and are not much given to political speculations or anticipations, I am sure we shall heartily agree that far above universal suffrage, vote by ballot, negro slaves, or factory children bills, is the Post-Office Reform, which would enable us, at the come-at-able price of a penny, to write as much sense, nonsense, or love, as we felt in our hearts wearying to get utterance. . . .

"My love to all I love, and all who love me, Imp though I am (a very bottle-imp, as you know, when you think of the pennies you now save, by lacking the temptation to buy queer vials for your alchemical son,)—Imp, I say, though I am, I have, I know, some affectionate and most dearly-loving friends, who think of me far above my deserts, and forget the cloven hoof; and to all these remember me kindly. I am not about to chronicle their names in rank and file, like the debtors and creditors in the merchant's day (or some other of his, to me, mysterious) books, or a serjeant's list of militia recruits, or an apothecary's list of his simples; but I will speak of them as a chemist, and say, all that answer to the test of thinking, asking, or wishing well of me, are my friends and beloved of me. . . . For my own part, I am now very busy; the class is only every second day, but it includes thirty-four students; and so large a practical class involves a great deal of trouble. I work at it every day from nine till five, and sometimes till six or seven; and I have sometimes had to spend my dinner hour in the Laboratory. All analysis or personal improvement is at an end—quite at an end. My health and spirits are quite good, but my daily occupations are uninteresting, and I never get a walk,

occasions, I thought I might happily and usefully occupy my time in writing you all Christmas letters. Accordingly, I wrote under the inspiration of mince-pies and mistletoe, roast goose and boiled turkey, *i.e.*, I wrote, as 'The Doctor' would say, Christmatically, and never supposing that I needed, like Charles Lamb writing a Christmas letter to a friend in China, to make any allowance for the time that must elapse before my letter reached its goal, I made the whole virtues of my story turn on allusions which were out of date and meaningless, if read a week later than they were written. Think after all this, after wondering and wondering and wondering that my letters were not acknowledged, let alone relished, that the first word should be that my letters were very short (this referred to other and former letters, as it afterwards came out), and next the staring, hideous truth, that the epistles had loitered a whole month on the way, and came lagging in like a cold dish at table, not quite unpalatable, but, as the cook would say, quite out of season.

"When I write letters to those I love, and having time, and having the happy mood on me, feel that I have written what will please them, I am fond of anticipating the effect particular passages will produce on the readers. Here a smile, I hope, will be elicited; there it will go hard, but the smile will be fostered into a full laugh; at another place a doubtful shake of the head may be given, and the whole letter, perhaps, ended by an exclamation, 'George will always be George!' And then the re-readings of the choice passages, the spelling over and over again of special lines, and perhaps the little tit-bits read out to Jessie, or Jeanie, or Mary, all this had been amusing and pleasing me in my thoughts about the letters, and then to find that not merely had not these letters arrived in proper time, but letters written afterwards, and of no value unless coming after them, had arrived sooner, and been divested of their own value, and seemed only to stand in the way of their tardy predecessors. There now, I am sure, when you got my brief note accompanying the verses to S., you thought my apologies for brevity very ill-timed, when accompanying the confession and proof that I had been devoting the time to spinning rhymes for a lassie instead of writing to my dear mother; whereas, had you

pieces to be performed on the stage of theatres with which he was professionally connected. But the genius of the man was the more seen in thus, as it were, shackling himself. The originals of many of Shakspere's plays, such as 'King John,' and 'Romeo and Juliet,' may be compared with his writings on similar subjects, and such a comparison brings out the great power of this wondrous man in more marked prominence; indeed often the only similarity between his play and preceding ones is in the names of the *dramatis personæ;* all the force, truth, and individuality of each separately drawn character, and all the blending of the whole piece into one harmonious whole, are his, and prove his possession of powers which no other writer has ever exhibited. No one can read him, and remain for a moment in doubt as to the originality of his conceptions; no one can be aware of the powers of his own language, and the high rank of its poetry, who does not read, and read, and read the wonderful works of Shakspere. The names of Dr. Johnson, of Cowper, Wilberforce, Coleridge, Wordsworth, Southey, Isaac Taylor, John Foster, Professor Wilson, and many more whose names are passports for good to what they speak of, will urge you to go on in your readings. Meanwhile, I'll stop to add another name, that of your loving son, George."

"LONDON, *21st February.*

"MY DEAR MARY,—It shall never be that you and I shall be left at the sport of the winds and waves, and debarred writing to and loving each other, because the seas take a fit of wildness, and the waves become impatient of the ceaseless beatings of the steamboat wheels. Why, I have a project for a steam-balloon, which I'll finish and put into practice. Would it not be a glorious thing to leave this dull earth, and, far above its mists and its vanities, fly straight as the crow to the point we wished, and when that was reached, descend like a plummet, with as true an aim as the eagle has when he drops the tortoise or the doomed oyster on the flinty rock?

"So manifold are the advantages such a machine would give for loving intercourse, that now that my steam is up, I could go on for the whole of this paper, ballooning. But I doubt if

that would exactly please you; and I shall be satisfied with indicating a single advantage which such an engine would give us for assisting our friends to comfortable abodes. You anticipate me, I am sure, and are already smiling; I must, however, write it. Don't you think, that by raising ourselves among the clouds, high above every earthly thing, we should find it a most easy matter to drop each friend into his or her 'niche' as the balloon passed over it, just as the old gander opened his webfoot and let Daniel O'Rourke descend, as he thought, to the ship below, but in reality to the marine villa of an astonished whale, who whipped him for his untimely intrusion. You might, perhaps, sagely ask, if my machine were possessed of a safety-valve, and if there were no risk of being blown up; but such a risk is effectually cared for by the patent wadding-cushions I have devised for the use of aërial voyagers. Talking of blowing up, I have lately devised a most excellent pun, which I shall here record for your amusement, my dear sister, though to record so foolish a thing, and gravely to find a place for it in this letter, is very absurd; and moreover, puns, like mineral waters, are very uncarriageable articles, and being amorphous, cannot be warranted and marked 'this side upwards,' so as to insure their going off with proper effect. That's the priming; here's the charge:—Last Saturday, Mr. Graham, chancing to be illustrating the nature of flame, required one of Sir Humphry Davy's lamps. I went and asked Mr. Young, the assistant, for one. He brought me one, adding, 'You had better trim it, and make it burn well, or you'll get a blowing up.' 'Oh,' said I, after smiling a few moments, 'I defy him to blow me up as long as I have a safety lamp.' And while they all laughed and enjoyed the chemical pun, I advised every assistant to provide himself with one to ward off explosions."

"*February* 1839.

"MY DEAR MOTHER,—Wind, and storm, and bad weather, and broken rudders, and maimed steamships, have failed in their cunning conspiracy to keep us from communication with each other, and I have resolved to celebrate the deliverance from the plot by writing you a long letter.

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"The weather here, while it is a while was warm and sunny, has [illegible] of its mildness and made us shiver with [illegible] houses; whether because Murphy, the [illegible] has [illegible] it; or because, as I hope, the [illegible] and [illegible] are being [illegible] for their right time, summer [illegible] presuming on a few good [illegible] and thick cloaks, and sport lighter, [illegible] dresses.

[illegible] shift as to the part of their dresses [illegible] They used (I speak of my remembrances) [illegible] the form of veils, then it descended and be- [illegible] to their gowns; a partial rise took place, and [illegible] was dedicated to adorning their mantillas and tip- [illegible] winter, I find, it has climbed to its former heights, [illegible] fringes of precious old lace are hung along the edges [illegible] or thrown around (I know not what it is termed) [illegible] built capital—I mean of a lady's bonnet. It will next [illegible] woven into veils and resume its ancient place, after the [illegible] *fashion* of fashions, which, like endless chains, return [illegible] themselves, or like the fingers of dials, revolve in appointed [illegible], which they never leave. By the by, I saw a very curious head-dress the other day, which I intended to have written about to Jeanie, whom I always look upon as destined, at no far distant day, to take her stand among the arbitresses of fashion. Subtle and discriminating I know she is, in the patterns of samplers and foot-stools, and very learned in all the mysteries and niceties of perplexing stitches. For her, therefore, this fact is specially intended; but having forgot to tell it her in the letter to herself, I intrust you with its delivery. Well, not to make a very trifling matter swell into absurd proportions, I was greatly surprised to see last Sabbath day, as I walked home from church, a bird of Paradise on a lady's bonnet. I have seen tails and wings, or wing feathers, of these glorious creatures glistening in the sun, as they did when clothing living members; but a whole bird surprised me;—yet there it was, the head and beak projecting over the side. When I say a whole bird, I of course exclude one element of integrity, or *wholeness*, in birds, viz., feet; for you know that birds of Para-

dise have no feet, and, according to poets, a lying set of men, never roost; physiologists, a presumptuous set of men, declare they have as good pedal extremities as geese or ganders; milliners, a foolish set of women, evidently support the poets, and unfeet them. Where, I wonder, do the feetless birds of paradise roost or slumber? We might send out a balloon on a voyage of discovery. Till I can blow a soap-bubble large enough to carry Samuel Brown and me after them, I'll believe that they slumber among the ruins of the *castles in the air*.

"I was out at Westham last Wednesday, and what do you think I got from S.? A kiss—eh? Perhaps I did, but I won't say anything about that. I got from her two snowdrops. I was quite amazed when she put in my buttonhole two of these lovely flowers. I'm thinking of making some verses on them, involving and evolving a new theory of snowdrop births; but I don't think it would be quite fair to send them to you till she has gotten them; besides, I have got some verses on the stocks solely and specially for yourself, which, as soon as my hobbling muse helps me out with them, shall be sent to you. Let me return, however, to the flowers. I always experience a strange and delightful exhilaration when I meet with flowers out of their season; they catch me by surprise, and ministering to that efficient cause of strong and keen-felt sensations, the novelty of impressions felt, they awaken all kinds of happy emotions. I got no good of the flowers somehow last summer. I made a few new acquaintances among them, and acknowledged the return of old friends; but as a whole, the season was so much spent among rottenness and disease on the one hand, and among fumes and noxious odours on the other, that the steaming fragrance of the flowers found my nostrils deadened to their delicacy, and the beauty of their petals was wasted on my smarting eyes. Do you remember the forget-me-nots I gathered for you among the rocks of Arthur Seat? That is a pleasing exception to the flowerless year. Have they all died away, and sunk into the earth? Is there any sign of awaking from sleep? any signal of their slumbers breaking into a glorious resurrection? Flowers lead to my telling how glad I was

to learn of B - L -'s convalescence. I do not wish to see more of those I love die, to prove—

> "That the good die first, and they whose hearts
> Are dry as summer dust, burn to the socket."

I speak of her in connexion with flowers, because she promised to share the flowers she got sent her with me, but did not after all, because, as I suppose, I one day laughingly said I should watch diligently what flowers she sent me, and consult the 'Language of Flowers,' to see the hidden meaning of each. B— laughed in return, and said, 'Oh, then, I won't send them.' And so I lost my flowers.

"One of the latest and most gifted writers on old favourite Egypt has found (for he travelled in the valley of the Nile) certain little porcelain bottles, in some of the catacombs or other strange nooks of that curious country, which have inscribed on them a legend *in Chinese characters*. These bottles are supposed to have been brought from China to Egypt, containing some rare essence, for the material of which they are made is coarse, and inferior to Egyptian ware. I pass over the curious proof this little discovery gives of the equal ancientness of these two curious and very similar nations, and of their having carried on traffic together, when this geological version of the world was new, probably before all the timbers of the Ark were rotten. I wish to tell you that since these bottles have been brought to this country, Dr. Morrison's son, or some other learned reader of hieroglyhics, has deciphered the words sculptured on the little vases: they tell the following beautiful truth, 'The flower opens, and behold another year!' Is not it a beautiful and truthful prophecy? I feel some sympathy with that cold-hearted, shaven-headed, long-tailed, infanticidal race, the Chinese, for so sweet a legend. The snowdrops I got forcibly reminded me of it; for as God, when he creates a bud, creates it to be first a bud and then a flower, and then a mature fruit (if I knew the Bible as well as I should do, I should here quote the passage which tingles in my ears, speaking of first the blade, then the corn in the ear, etc., you know it), he gives the earnest and assurance in the first bud or flower of spring that another year will be; for as a whole year will be needed to let the buds

pass through their several stages till they reach perfection, so we feel, in the heart and in the head, warmly and with realizing conviction, that another year is given to us by the Giver of all good.

"I have but time to add that it is quite arranged that I leave the Laboratory in the latter end of April; this is all settled, and it is all that is settled; so be sure I'll not in this thing disappoint. My M.D. degree will oblige me to come home."

We append the verses of which the preceding letter speaks.

"ORIGIN OF THE SNOWDROP.

"No fading flowers in Eden grew,
Nor Autumn's withering spread
Among the trees a browner hue,
To show the leaves were dead;
But through the groves and shady dells,
Waving their bright immortal bells,
Were amaranths and asphodels,
Undying in a place that knew
A golden age the whole year through.

"But when the angels' fiery brands,
Guarding the eastern gate,
Told of a broken law's commands,
And agonies that came too late;
With 'longing, lingering' wish to stay,
And many a fond but vain delay
That could not wile her grief away,
Eve wandered aimless o'er a world
On which the wrath of God was hurled.

"Then came the Spring's capricious smile,
And Summer sunlight warmed the air,
And Autumn's riches served a while
To hide the curse that lingered there;
Till o'er the once untroubled sky
Quick driven clouds began to fly,
And moaning zephyrs ceased to sigh,
When Winter's storms in fury burst
Upon a world indeed accurst.

"And when at last the driving snow,—
A strange, ill-omened sight,—
Came whitening all the plains below,
To trembling Eve it seemed—affright
With shivering cold and terror bowed—

As if each fleecy vapour cloud
Were falling as a snowy shroud,
To form a close enwrapping pall
For Earth's untimeous funeral.

"Then all her faith and gladness fled,
And nothing left but black despair,
Eve madly wished she had been dead,
Or never born a pilgrim there.
But, as she wept, an angel bent
His way adown the firmament,
And, on a task of mercy sent,
He raised her up, and bade her cheer
Her drooping heart, and banish fear:

"And catching, as he gently spake,
A flake of falling snow,
He breathed on it, and bade it take
A form and bud and blow;
And ere the flake had reached the earth,
Eve smiled upon the beauteous birth,
That seemed, amid the general dearth
Of living things, a greater prize
Than all her flowers in Paradise.

"'This is an earnest, Eve, to thee,'
The glorious angel said,
'That sun and summer soon shall be;
And though the leaves seem dead,
Yet once again the smiling Spring,
With wooing winds, shall swiftly bring
New life to every sleeping thing;
Until they wake, and make the scene
Look fresh again, and gaily green.'

"The angel's mission being ended,
Up to Heaven he flew;
But where he first descended,
And where he bade the earth adieu,
A ring of snowdrops formed a posy
Of pallid flowers, whose leaves, unrosy,
Waved like a winged argosy,
Whose climbing masts above the sea,
Spread fluttering sail and streamer free.

"And thus the snowdrop, like the bow
That spans the cloudy sky,
Becomes a symbol whence we know
That brighter days are nigh;
That circling seasons, in a race
That knows no lagging, lingering pace,
Shall each the other nimbly chase,
Till Time's departing final day
Sweep snowdrops and the world away."

A fuller account of the origin of the verses is given to Miss Abernethy, a lady whose acquaintance he made in the beginning of his student life, through her nephew, Dr. Niven. An intimacy then sprang up with the family at Willow Grove, which each later year became more close and tender. Miss Abernethy was truly a second mother to George, but the affection on both sides was usually hidden under a guise of fun of the most exuberant kind, he representing himself—in sportive reference to the difference of years between him and his matronly correspondent—as her devoted swain. The repetition of facts given in previous letters, will, we trust, be pardoned, for the sake of the new dress in which they appear.

"*Thursday, 14th Nov.* 1839.

"DEAREST JESS,—I send you the long promised verses at last, which you may well before this have despaired of ever seeing; but not even a chemist can refuse when the 'fair demands a song.' I have spared my own words by quoting these from Cowper, but remembering that you are not a reader of that poet's 'Task,' I foresee a chance of my quotation being misapplied. For while I am using 'fair' as an adjective, in referring to my dearest Jess! she may be thinking of 'fair' as a substantive (that is, as she told me in Penicuik, the 'name of a person, place, or thing'), signifying the collection of men, and women, and beasts, and roly-poly pins, that assembled at the aforementioned town, and so expect me to celebrate the glories of the Penicuik fair. Truly that fair did demand a song; but did it not receive it from the improvising lips of Rhyming Willie, since dead and become immortal? and was he not rewarded with a dole of bread and cheese? which is more, perhaps, than Rhyming Wil(lie)son may receive for his labours. So that, having seen to the rightful application of my quotation, by which I thought to have saved myself the coining of some delicate compliment; and, after all, I have had to dedicate nearly a page to avoid its recurring as a slander, or implied but unfulfilled promise on my own head; I may make a stride forward, towards the blotting and blearing of the great expanse of fair white paper, which stands waiting for hieroglyphics. If I have

long delayed sending you these verses, remember that I have not been, like other of your friends, sailing on the blue Mediterranean, or drinking in inspiration from the bright eyes of noble Greek ladies, or dancing with Barcelona dames; but had to gather what spirit of poetry I could from the reading of treatises on Heat or questions in Algebra; to which were added, grief and sickness about me, to hinder the muse. So that, when I came to my rude rhyming anvil, and strove to hammer into shape the crude ore that lay in my brain, I could never get the metal raised to the *red-heat* necessary to its being wrought; or my hand refused its cunning, and I threw the tools away. Thus verse was slowly added to verse in capricious fashion, the second last being written first; and it was not till the pleasure of writing my essay awoke in me some quickness of thought, that I could get my ideas rendered into rhyme.

"As you may be curious to know what led me to take so odd a subject, I shall very hastily tell you how it happened. One afternoon, last spring, after a long day's work in the Laboratory, at London, I set off to a little village in Essex, to pay a visit to the fair young Quakeress, whose portrait John brought from London. When I was departing, she brought me two *snowdrops*, the first that had flowered, and placed them in my *left* button-hole; and so we parted. As I had some eight miles to walk home,—the snowdrops in my bosom, and a speculative head on my shoulders,—I fell to thinking of the flowers, and wondering whether all plants are equally old, or may not have been added in successive tribes, as occasion demanded (see Lyell's 'Geology'); and as I pondered, some angel, like the one in the story, whispered in my ear the 'theory' which I have just dedicated to you.

"It has lain in some cobweb corner of my brain ever since; only a single verse being framed, which came into my head one day when walking to church, but remained brotherless, waiting for some angel like you to make the other unrhymed thoughts bud and blow, and so take away its loneliness. When I got home that night, however (it was the 13th February 1839), I put the flowers carefully by; and, being somewhat given to symbol-worship, I folded them up and laid them among my

papers. There I found them the other day, when turning over my portfolio. Instead of burning them, I thought I would keep them, and send them to you. They accordingly accompany this letter. It is not every day that a lady gets not only a poem, but the very thing on which the poem was written. So far as I learned, poet D. R. did *not* send to Miss Niven the 'spirit of the old man' that came to him,—wrapped up in brown paper, or tightly corked in a bottle! so that there I have the advantage of him; and I ask credit for it."

Daniel notes in evidence of the versatility of taste which kept the balance straight between work and recreation: "Leisure was found, in spite of much occupation, for an occasional evening with the poets; and others of his favourite home relaxations were singing to the accompaniment of the guitar, in which he then took lessons; and writing verses, grave and gay. One or two of his earlier efforts have already been given; and a memorial of the poetical pastimes of this season lies by me now, in the form of a well-filled MS. volume of our joint rhymes, to which he more than once refers in subsequent letters.

"His favourite *nom de plume*, Bottle Imp, was adopted as his poetical designation; and on the title-page of the MS. volume, among the whims of a miscellaneous emblematic pen-and-ink sketch, is a large glass flask, out of which an imp struggles to escape, while thrusting forth one hand with a 'sonnet,' or other rhyming product in its grasp. An easel behind supports a picture partially veiled, on the cover of which is this title of the volume and its contents: 'Quips, Quirks, Quodlibets, and Quiddities, by Bottle Imp and Mynheer van Scratch.' A rhyming preface, introduction, and errata of quips and quirks follow; and it will be seen that after his return to Edinburgh, George continued to contribute to the joint volume. At a later date, our cousin James claimed a share in its space, and some beautiful poems of one we had learned to love as a brother preserve there the few and slight memorials of intellectual gifts of rare promise, which were quenched in death just as he reached his twenty-first year:—

'When life was in its spring,
And his young muse just waved its joyous wing,
The spoiler came.'

"Among these youthful productions contributed by our cousin to the MS. volume is one of considerable length, and rich in quaint, fanciful imaginings. It is entitled 'The Trance,' and is founded on a story told in one of the Fathers, of a monk who was bewailed as dead, and afterwards awoke in life.

"The volume is illustrated with pen-and-ink sketches, and one of the lighter effusions of 'Bottle Imp's' quill may be given here, though the contents of the book embrace grave and earnest thoughts, as well as quirks and quiddities :—

MERMAIDS' TEARS.

Pearls are the tears that mermaids weep
When they their midnight vigils keep,
For mermaids sigh, and sorrow too,
And weep, as well as I or you.

Perhaps you've thought, perhaps believed,
That mermaids, when their hearts were grieved,
Wept briny tears ; 'tis even true,
'Tis they with salt the waves imbue.

But tears more precious must be shed,
When those whom they have loved are dead,
The mermen of the deep, whose charms
Have wiled the mermaids to their arms.

And nereids catch them in their shells,
And hide them where the sea fish dwells,
Till years revolving tint them o'er
With hues they did not know before.

Then from the depths of Eastern seas,
Where dive the swarthy Ceylonese,
The tiny shell-fish, from the rude rock torn,
Through waves unwelcome, to the light is borne.

The unconscious casket of a gem,
Dies to adorn a diadem ;
And tears that trembled in a mermaid's eyes
Become an English lady's prize.

"The advantages of Professor Graham's laboratory did not altogether realize George's expectations ; but he attained in

other respects some of his most cherished wishes in visiting London. Among these may be specially noticed his obtaining an introduction to Faraday, and his attending one of his brief courses of Lectures at the Royal Institution. To these I accompanied him. The subject was Electricity in some of the aspects in which it was then receiving his special attention; and subject and lecturer alike furnished a rich treat to the young chemist. Faraday delighted him in all ways; a self-made man, and yet with a manner so modest, and a bearing so kindly to the eager inquiring youth; in addition to all which, he was a link that seemed to connect him with Sir Humphry Davy. So those lectures on Electricity, in the Albemarle Street Institution, were a pleasure of the highest kind, and full of profit to him afterwards in various ways."

During this winter the illness of his cousin Catherine had caused much solicitude. For above twelve months, she had been almost entirely confined to bed, and George's letters abound in the kindest messages to her. Mary's health was also indifferent; and dark clouds hung over the household. On March 26th, he writes: "How very mournfully you are circumstanced at home! I shall soon be with you and find myself in the midst of all the sorrow; till then, I am the occasional sufferer from sad reflections, but I do not revolve these subjects half so often as I should do, being engrossed too much about far less profitable things. My Thesis has knocked everything else out of my head. I had a severe fit of sickness after finishing it, which does not seem to have left my head clear yet." Referring to this letter he says, ten days' later:

"MY DEAR MOTHER,—I sent you a letter by a fellow-chemist, who left this for Edinburgh, which I suppose you have got by this time; you will have found it a very heavy, stupid production, altogether unfitted to excite a pleasing emotion, and very unlike the sort of letters I generally send you. I suppose I had been suffering under the reaction which succeeded to the toss and ferment I had been in for three weeks before, and that I was paying the penalty of overtasking my powers and work-

ing double tides. Whatever be the explanation, the case was this, that my soul was carried away by goblins grim, and hurled with a splash into the Red Sea, where it was tied to one of the rotten wheels of Pharaoh's broken chariot, now converted into a mermaid's bathing coach. There it was left lying, 'deeper than plummet ever sounded,' many millions of fathoms deeper, for it was converted into lead, and not having a string attached to it, it dived to the bottom in a moment of time; and all the horrid ugly creatures that are permitted to torment ill-regulated minds, learning from the dull air of the mansion (the body) that the soul was not at home, took up their abode in its deserted temple, and indulged in their hideous cantrips, till even a 'bottle imp' was tired of their presence. It was doubtless some corner of my mortal parts that had got out of repair, a lobe of the liver, or a pouch of the stomach, or a fold of the midriff, which set the faculties that are under their influence out of balance, and tormented me. In these circumstances, an ounce of Epsom salts will effect more than an aphorism of Plato. I am now in possession of my soul again, not to the full as good as before, but still tolerably well; and so I'll try and write you a more readable letter than the last was, though the brevity of time tells me I shall be able to scribble very little.

"I wrote to father yesterday, in reply to a kind letter from him, saying that I should certainly return at the time I stated. I must return immediately and study for my passing.

"They must all excuse me not writing, as I shall be so soon home, that I may much better keep what I have to say till I come home, than hastily scrawl it from here. I shall moreover have many things to do before leaving London, and writing won't at all suit me, in these circumstances. Three or four days ago the weather was pleasantly warm; to-day it is freezing cold, and snow is falling thickly on the paths; all the pretty flowers will be killed, and the young buds be nipt by this untimely frost. A little squirrel, that lies near me, has played about a short while; but even his warm fur was too thin to shut out the cold, and he has crept into his dormitory, and rolled himself round and round and round till nothing but the tip of his tail peeps from beneath his bedclothes. How cold and sad

and dull everything seems; I have had nothing but disappointments, cruel disappointments, all winter, and you have had disease and death for your portion.

"Poor B— L—. She was a noble, lovable creature, and since you first wrote of her illness, I have ever hoped bravely that she would recover; but Mary's last letter has extinguished all hope, and left me nothing but a horrid apprehension of grief spread through many families, and hearts wounded irrecoverably. She is ripe for the kingdom of heaven, and too good for this world. I shall *learn* to think of her fate in this light, but I cannot yet. Write soon, and let us know how her ailment goes on.

"Before I come home to you, I shall run into Kent for two days, and snatch a look at the old cathedrals.

"You are better, I am very glad to hear, and Mary is better, and Jeanie and Jessie are well, all which things do greatly gladden me, and enhance the pleasure with which I contemplate my return. Meanwhile, I remain, your sincerely attached son,

"GEORGE."

His departure was unexpectedly hastened by intelligence of Catherine's death. Though prepared in a measure for this sad news, yet the brothers were taken by surprise; so great is the marvellous change from life to death, we can but very rarely feel otherwise. All plans were cast aside, and George hastily packed up his books and papers, bade good-bye to the friends he had made in London, writing a special farewell to the friend for whom the "Snowdrop" verses were written. Her society and music had proved a pleasant relaxation from study, and he begged her acceptance of his favourite guitar, never again resuming that instrument. Hastening to Edinburgh by way of Liverpool, he reached it in time to bear a part in the last sad rites with which his cousin's remains were committed to the dust, in that hallowed spot, where now he and two others of the group of mourners present on that April day are laid to rest.

The first letter to Daniel after leaving him, tells us of his journey and home-coming.

"I shall never succeed in telling you all I wish to do, even though a huge folio of paper lies before me. But I shall run the best chance of interesting you by beginning at the beginning.

"A right famous and rapid bowl we had along the railway, in most comfortable carriages. You remember, I daresay, the young Irishwoman intrusted to my care by her weeping mother. Poor thing, a first child, and it only five months old, so distressed her with maternal fears, that I strove to alleviate her unnecessary alarm, and soon succeeded by a few little attentions, such as holding Fanny's bonnet, and getting its mamma a drink of porter, halfway; but above all, by devising an arrangement of my handkerchief so as to shade the baby's eyes from the carriage lamp, I won for myself all of her heart she could spare from her baby and its father,—that quantity, however, not being measurable even by our chemical scales. It would have pleased you—it did me—to see the warm-hearted young mother gaze on the little baby's face, and then kiss its cheek, to gaze again, and try, as I imagined, to trace its father's lineaments in its tiny features. This was my notion. I don't know what Mrs. G—— would say to it. I did not rest till I saw her fairly accommodated in an inn, and then with a thousand thanks, I reached the boat destined for me.

"I may pass over the weary town of Liverpool, a most dull, stupid place, and the voyage to Glasgow, which was enlivened by a sight at once (like many scenes in real life) sad and mirthful, of an Ayrshire carpet-weaver, who, having been drinking, went through the whole phases of intoxication in so characteristic a way, that I shut the book I was reading (Campbell's 'Life of Siddons'), and sat watching the real actor with a feeling of amazement, and I must say pleasure, which does my heart no credit; but it proved Shakspere's characters to be so truly drawn, that I think I did right to read the lesson which a foolish fellow-mortal afforded me. I got into Glasgow about six o'clock on Wednesday evening, and received, as usual, a most kind hearty welcome.

"Catherine was little altered; a little more emaciated than when I left her, but serene and beautiful. I thought her very like her mother, as I remember her. I kissed the cold, blue

lips, and wished I had but been in time to have bidden her farewell. Every cause of sorrow that embittered her life seems to have been lessened, as she prepared for death, and the kindly, affectionate feelings she had for all of us were in full force. . . . I remember the thousand kindnesses she showed me, from her earliest days; the generous presents which afforded a thoughtless schoolboy the means of gratifying many an eager desire, and the manifold unnameable favours freely rendered to an often ungracious recipient. The dead are hallowed. To think of them as they lived, is, with me, to think only of their love and their noble qualities; if the image of faults comes back with their memory to me, it so swiftly reminds me of my unkindnesses to them, that I *dare* not, even if I would, think evilly of them. Catherine suffered little before her death; she retained her intellect unimpaired to the last, and with most steadfast declarations of firm hope in Christ, increasing as death drew near, she sighed away her spirit, and went to be with God. James was desolate and woebegone, but by timely conversation I have won him to a brighter mood, and he daily grows more cheerful."

A visit paid within the next fortnight to the Exhibition of Paintings by Living Artists, which each spring enlivens the citizens of Edinburgh, gives rise to impressions communicated in a letter to Daniel, which cannot fail to be read with interest by many:—

"Harvey's picture, 'The Castaway,' is to be engraved. It is a fine picture. I am every day more and more convinced how little judgment, and taste, and knowledge I have about pictures. I only care for what touches my feelings. I am quite dead, from mental dulness, to the dexterities and resources of the art. But this picture influenced me as the 'Titian' in the Louvre did Haydon. I looked over my shoulder, and past Mary's arm, and through the doorway, till my eye fixed on the solitary figure of the helpless sailor, huddled up on some broken spars, arranging his position so as to elevate a fluttering rag as a signal, while his curved hand shaded his eye from the lurid glare of a sun setting in blood. A lean, famished dog standing shivering on

the brink of the unstable raft is his only companion; and this simplicity in the elements of effect is one great charm of the picture. The newspapers, and a host of fools here, have found that the man is a ruffian by his look, because, like me, he forgot in parting from home to take his razor with him. But this is all nonsense; and if it were truth, it would not alter the value of the picture, for the instinct of life is probably doubly strong in ruffians, who have no hope beyond the grave. Anyhow, the intense eager look he casts towards the unbroken horizon, fills up my conception of such a scene. The sea is that waveless, silent abyss, which Coleridge's 'Ancient Mariner' was becalmed in. I should not wonder though Harvey had been taking a spell at that glorious poem. They say he painted it in ten days. Such happy thoughts are not born every day.

"I have much, too, to say in favour of David Scott, a great favourite of mine. He has a picture of 'The Alchemist,' representing Paracelsus among his pupils. It is a speaking picture: in the students' faces are shown all the moods, from utter carelessness to intense attention, which may be seen in the hall of any College, only they are exalted, and made delicately characteristic by the touches of genius. Two happy, dark-haired Italians lean listlessly over their lutes, telling by their looks that they have found in love and mirth an elixir of life which could not be surpassed by the alchemist's art. A sceptical Englishman near them looks incredulously on a mystic vial which his friend declares to be a portion of the *aurum potabile*, the all-powerful liquid which was to make us immortal. There are few now-a-days who would drink that draught could they have the refusal. I am sure I should not on any terms; but I think I might press a teaspoonful on some of my dear friends to call them back from the precincts of the grave, that I might have again those who make life worth possessing. Well, of the picture. It is absurd to try describing the picture; but I am so haunted by the remembrance of the earnest, impassioned air of a young enthusiast, who records on his tablets every wild word of his master: the perplexed look of a grave old knight who has lost the alchemist in his extravaganza, and is catching the sound of a single familiar word here and there, but at such

long intervals that he knows not what the teacher would be after; the shrewd air of a wily monk, who has eyes and ears only for the exaggeration and positive deceit which he sees the adept is mingling up with some real and more fancied truth; lastly, there is introduced, with excellent effect, a fool, the jester of some court, who has wandered witlessly in, and sits on the bench in his motley coat, with glaring, wondering, meaningless stare, baffled in all his attempts to understand what is going on in his presence. I have forgotten all about some dames of high blood and great learning who crowd the porch, except that they are as ugly as bluestockings are privileged to be. The colouring of this picture is, like Scott's former ones, unpleasant, but that is forgotten in the boldness and effectiveness of the execution. Allan's 'Slave Market' I utterly disliked. It is a cold, stiff thing, painted so smoothly and softly that it makes it quite impossible to forget that *it is a picture.* You cannot be startled into forgetfulness of its being a fiction for a moment; there is no starting of the figures out of the canvas; no depth of shadow to give a bold effect. It seemed to me a merely pictorial inventory of the wardrobe of Mr. Allan, P.R.S.A., daintily displayed on good-looking men and women, but as for exciting the emotions there is nothing to sympathize with. The Exhibition is, as a whole, very, very poor. The committee of the old Association are accused of senseless conduct about the pictures; of this I don't know, but these are all the ideas I got from the Exhibition. I would pay a shilling any day to get as many new ideas, and I am contented. But on former occasions I have got a better shilling's worth out of them."

A supplement to his Thesis was the first work that occupied George on his return home, followed afterwards by study for his last examination for the degree of M.D. Early in May, he tells his brother, "I am zealously prosecuting my professional hopes; and, weighing domestic and professional hopes together, I shall have no reason to regret that I came back here. This is the place for me, Daniel. The advantages for studying are very great, and I am getting acquainted among the enthusiasts in science here, whom I too much neglected. I shall look among

my peers now for welcome and assistance; and trusting to enthusiasm and perseverance, I do hope for a name and a fame among them, worthy of myself, and of us all." A pen-and-ink portrait of George, taken by an artist friend, accompanies this letter, of which he says: "How like you the enclosed likeness of your loving and loved brother? . . . . . I shall here transcribe for your quiddity book, if they are worthy of it, some lines I wrote on Sunday to a Polyanthus, which mother loved.

"How the rich cups of that so lovely flower
Lift to the heavens their purple velvet leaves,
That every petal freshened by the shower
Which falls in dewdrops, from its slanting eaves,
May feel the warm sap through its vessels run,
In glad obedience to the glowing sun!

"Each fragrant chalice breathes upon the air
A scent more sweet than censer ever flung
In clouds of incense, blinding all the glare
Of garish candles, when the mass was sung:
'The long-drawn aisle,' and the cathedral's gloom,
Ne'er felt the richness of such rare perfume.

"With forms more graceful, and with vestments clad,
Such as the haughty prelate never wore,
They give to God an adoration glad,
That well might teach us all our souls to pour
In high-souled, earnest, heaven-uplifted prayer,
To Him who doth for all his children care.

"We are all pretty well. Mary not so well as she was; but some cold east winds having blown by, I look for her soon being better again. Write to mother soon. She tells me I am not improved by my visit to London, which of course means, I am worse. Don't you earn this character."

The next letter to Daniel gives a choice specimen of the fun ever ready to brim over on the slightest occasion. The British Association met that year in Birmingham, and the possibility of attending its meetings is alluded to.

"Is not this letter-writing a poor, lean, meagre apology for talking and laughing, and looking happy and looking sour, and being merry, and being perverse, and sitting side by side, and drinking and smoking, and seeing each other's faces, and watching eyebrows going up, and eyes sparkling, and brows knitting, and

lips pursing and pouting, and lines moving from corner to corner of your friend's face? And what aid lendeth the sketch of my *viznomy* in helping you to realize my April-day countenance, and fill up the blanks of my written talk to you, by thinking of the look which tells the sentence before the words come, and might teach us to keep our lips closed, and be content to make faces at each other? A young fellow whom I met at Willow Grove the other evening, asked if I were not the brother of one who had gone to London. He had met you somewhere, and he dilated at great length on the 'exceeding *amiability*' of —— ! ! Hang amiability! I get daily more afraid of what would be better christened 'selfish indolence.' I think better of perverseness, and eschew the friendship of every one who does not, at times, take indulgence in pride, or satire, or some other misnamed vice of wicked human nature. I will become a Free Mason, or learn the Egyptian hieroglyphics. I will invent a system of symbols, and chalk down eyes and noses, and lips and brows, and tell my tale by some other way than blots and blurs, and stops and commas, and scrawly sentences. It is no use writing you news; every fact is twisted and set awry before it reaches you. Our epistles always set off at the same time, and, like the fleets of Bonaparte and Nelson, which crossed each other in the dark seas some half dozen times and did not know it, come athwart each other, and pass on to spread false intelligence among us. A great pile of unanswered questions weigh down my faculties, and would rub the nib off my pen if I tried to reply to them. Think not that you know anything about us here. Publish nothing that reaches you. Be very wary of reflecting on the ideas you gather from my letters. The very moment after I send a letter to you, something arises to alter the truth of what I have written; and the next morning a letter comes from yourself, which by half anticipating, yet in a different way, what I had been writing about to you, tumbles me down from the height of satisfaction, where I had been regaling myself with the idea that I had cleared scores with Daniel. And yet the crossing of letters (not ladies' crossing, which I love not) sometimes effects good, as in the present case; for, when I wrote the last letter, I had abandoned the idea of going to Birmingham.

But your most kind, welcome, very delightful letter urging it on me, and reminding me of what, in the ungeographical cast of my brain, I had absolutely forgotten—the nearness of Birmingham to London, has set me a thinking again on the matter, and I think I shall be able to accomplish it. Although my plans are still green and immature, I write that the damping of your thoughts on seeing me, which my last letter may have occasioned, may be effaced by the shadow at least of a hope. I shall not stay long in Birmingham; probably come away before the end of the time. Samuel Brown will go up with me (if I go; if I don't, he says, he will not either), and he'll go on to London too; so that, if things work well, we'll give you enough of our poor presence.

"If I had been brought up at the desk in the '*Dr.*-Sir' one-page school of correspondence, I would stop here, having written what I took up the paper to tell you about; but, if you *oblige* me to write letters to you, you must read all I write you. And having discoursed largely on rational matters, like an oracle, I must now have a little room allowed me for some antic gambols. I have had a huge share of misfortunes lately, all of which have concerned my upper works. They have been *capital* occurrences; and have come nigh unto affecting of my brain. I am still, however, lucid, and take the opportunity to record them for your benefit. I think I forgot, some long while ago, to tell you that, when I one evening, 'high as heaven exulting,' clomb Arthur Seat, a breeze, an envious puff, whirled my good hat 'sheer o'er the crystal battlement' of the lofty pinnacle. I rushed in desperation after it, but the hat, having taken a side chase before it descended (?), was whisked out of sight before I could follow in hot pursuit. I galloped down to the Hunters' Bog at break-neck speed, but all to no avail (here I want a line from Gray's Elegy, written in anticipation of this event, to the effect, 'Nor on the hill nor in the *bog* was he); no hat could I see, and no hat did I find. I strongly fancy that it ascended, and was borne aloft by some 'cross wind' to the limbo of vanity, which, as according to Milton it contains monks' cowls, could never refuse a place to a good twenty shillings' stuff hat, not much the worse of wear. If it was refused admittance there, I incline to

the idea that it went up among the stars, and forms a new constellation. It would probably settle upon the locks of Berenice, whose tresses have too long 'wantoned in the wind' not to feel glad of such a covering. You remember who taught us about 'Coma Berenices.' I'll speak to the Astronomer-Royal when I'm in London, and set him to point his telescope in that direction. It would quite suit Sir James South for a new letter in the *Times*. Well, I got a new hat, and thought to treat it handsomely; but one day, in Princes Street, it took advantage of a favouring gale to bounce off my head, and after rattling along, to the great delight of the lookers-on, for nearly a division, was captured, with a compound fracture of the upper edge. A cap doctor (not a capped one), by means of a ligature, healed the breach; but, as I can assure you, it was never the *same* since. This injury to its upper storey deranged its intellects; and the consequence, the fearful consequence was, that when I was seduced by John Niven into entering a bathing coach, two days ago, my hat took advantage of my head not being in it to rush with insane energy into the waters. Nor was this enough, for not content with suicide, it strove to commit murder by dragging in with it my inoffensive gloves. After being two or three times overwhelmed among the waves, and battered on the steps of the machine, it was dragged out, carefully wiped, and being planted on my head (which it kept cool) it dried as I walked up,—doubtless to the great delight of the passers-by. John Niven's hat, actuated by a generous impulse, bolted in after it, but it suffered little, having been quickly rescued by its vigilant master. I must have a gossamer at three-and-ninepence."

The next letter says, "I have offered myself as a lecturer for the Philosophical Institution here; but I fear all chances are gone there. They propose to let the Association lie dormant for a couple of years, and give the folks time to digest what they have learned. In truth, last winter did not get on swimmingly, owing to the absence of popular speakers, and they do not wish to try it again. However, I was told by the Secretary and Treasurer that if I gave them in a syllabus of my proposed course, they should give it every attention; this I shall do. Failing this, I shall lecture somewhere else, write papers, teach

chemistry even in a boarding-school; anything, so as I am kept among the retorts and crucibles. Whatever happens I shall not regret London and *its advantages*.

"Meanwhile, I have almost finished a supplement, as long as my essay, from which I hope for credit, as it is thought highly of among the good people here. If I write any more I must give over telling truths and take to lies, such as that pussy (whom I would have called Miss Hamlet, had she not intentions of early marriage), *i.e.*, Lady Othello, sends her love to Bob, not Bob H., but Bob Grimalkin; and I, imitating her Christian example, send kindest love to you and to all friends."

On May 24th a postscript to a letter is as follows:—

"The examinators at Physicians' Hall have rejected one of the presidents of the Medical Society, and a great star among the students to boot. This frightens us all, and will explain my hasty, horrible scrawling. Samuel Brown has passed his first examination. Poor B—— is no better.

"As you have so much labour on your hands, I shall tell you a little incident I learned the other day. I have overdrawn my bank in the article of sense, and so I add a piece of real nonsense. You must know by name a certain medico, Dr. ——, who gives people certificates although they do not attend him, and lives in a very sorry fashion, being in truth a misbegotten, ill-conditioned, crack-brained knave. Well, the other day, he, as is his wont, marched out at the head of a crew of raffs, bent on the capture or destruction of weeds and wildflowers. Having gained the wood of Colinton, they sat down on a bank to examine a flower, and while the doctor was explaining the envelopes of the plant, and descanting on them, one of his satellites, more curious about the Doctor's own outward covering, saw with some surprise his preceptor's coat buttoned close to his chin, and his bare wrists sticking out at his cuffs. 'Doctor,' quoth the pupil, 'where's your shirt?' 'Tout, tout,' was the reply, 'just where it should be' (by which I suppose the Doctor meant, hanging over the back of a chair at his garret fire; although, as you will see from the nature of the case, the State Paper Office, which holds so many documents valuable to prove

or disprove anything, might be searched in vain for those important records, yclept in law phrase 'washerwomen's bills,' to authenticate this idea). The question was repeated, and the reply; and at last the youthful philosophers, determined to have ocular demonstration, stripped the Doctor, and behold, like the happy Irishman in Sultan Serendib's tale, he had no shirt at all! To prevent any bad consequences from the exposure, the Doctor was immediately taken to the nearest public-house, soaked outside and in with whisky, and sent home preserved in spirits."

"*June* 22, 1839.

"As my last letter was steeped to the brim, and overflowing with egotism, my present one shall treat of other folks, and their *passing* prospects. . . .

"I urged John Niven, as soon as he came home, to go up for his examination. He arrived last Saturday, adventured passing on Wednesday, and is now half an M.D. I don't know whether I mentioned that David Williamson passed the day before me [the first examination for M.D.] Anyhow, we three callow doctor chicks, as you rightly christen us, had a grand chirruping together last night at having broken our shells. I was purveyor of *crowdie*.

"I have learned a most excellent tale, illustrating the strange fancies which monomaniacs take, which I think will at least amuse you. A young medico was calling the other day on an old dame in the west end of Princes Street, and found her sitting at tea, the tea-cups being placed on the table without an intervening tray. 'You'll be surprised, sir,' says she, 'to see me without a tray; but you see, Dr. So-and-So took me once up to a tinsmith in the Lawnmarket, and japanned all my arms, and since that time I canna bide a tray.' Some conversation followed this announcement, and the old lady volunteered the account of the beginning of her monomania.

"'You see, sir,' says she, 'my only sister that I liked weel, died, and I was sitting at the fireside, thinking on my sister, honest woman, that was lying dead in her coffin on the bed beside me. And I heard, all of a sudden, an unco noise in the

bed, and when I looked, sir, my sister (that was dead and gane) was sitting up in her coffin looking about her. Aweel, sir, she got out o' her coffin, and cam ower the bedside, and went to the tapmost lang drawer, and took out a cambric pocket napkin, and wiped her nose, and then she went and put it in the bag for the dirty claes that hung upon a nail in a corner. And after that, sir, she climbed into the bed, and got into her coffin, and *straighted* hersel' in it, and pu'd the lid ower her, and laid down quietly. Weel, you see, I was in an unco fright, and I ran and got the undertaker, tell't him what had happened, and asked him what was to be done. And he says to me, "We'll no let her rise up for *that* again;" so he asked me for a white cambric pocket napkin, and he pit it in the coffin and nailed down the lid. Weel, Sir, when I was sitting next night at the fireside, didn't I hear my sister that was dead (honest woman), *blawing her nose in the coffin!*' That is the most extraordinary story I have heard for this long time, and long and loud I laughed when I heard it. It is gravely related and believed by the old woman, whose mind was probably overthrown by the death of a beloved sister.

"For myself (for I must have a little egotism), the Philosophical Association gives no lectures of any kind next winter, so my offer could not be accepted. I have promised, in the meanwhile, to assist Skae in the chemical part of his Medical Jurisprudence Lectures, and Jameson, I hear, wants an assistant for his journal."

The much dreaded ordeal in anticipation being safely passed, George announces the fact, with particulars, to several members of the family absent from home:—

"MY DEAR DANIEL,—I shall never more, rightly or wrongly, divide with you the title of *Mr.*, for I am *now a physician* (three cheers and a hurrah!) having passed the dreaded inquisition yesterday, so that I am not twenty-four hours old at the time I write you. I did not intend or expect to go up to Physicians' Hall for two weeks yet, and had made almost no preparation, having been writing my Thesis, and writing letters and making

out abstracts for Samuel Brown, and procrastinating in the expectation of getting John Niven's assistance. Now I can offer assistance to him, and help him in his difficulties. It was a much more simple thing than I expected, and it had need to have been, for I only studied a week for it, but that was a very hard week's work. I began Thursday before last in the afternoon, and worked on that day and every succeeding one up to yesterday, thirteen hours a day, beginning at nine o'clock, and getting to bed at one o'clock A.M. I contrived to go twice through a huge octavo of 600 pages, of 'Practice of Physic,' another of 700, besides smaller books innumerable. On the Sunday, I went through the morning service of the Prayer Book at home, and then took to the Surgery, which I nearly finished that night.

"The only one of the examinators who bothered me much was Hamilton; but he smiled, told stories, and answered his own questions, and declared himself quite satisfied, the which I did not contradict, although, when the examination was over, I apologized for having answered so ill, as I had been working at chemistry all winter. He would not, however, hear me; said I had answered quite well; so that I must fain lay that unction to my wounded pride, which does not, however, suffer much on this subject. I was more fortunate with Home, who took me on the very subject I had made a particular revision of on the morning of the examination, viz., measles, smallpox, scarlet fever, and the like, in which I perfectly succeeded in satisfying the gentleman, as far as his deafness would allow him; there are worse faults than that last in an examinator; and when he asked me some inconvenient questions about skin diseases, I led him away to a more familiar subject. Dr. Traill questioned me regarding the differences between the appearances when men are hanged by the neck till dead, and when they are strangled on the ground by a rope twisted round their throats—in short, on the philosophy of burking; I amply satisfied him on all these pleasing topics, and was sent from him with high commendations. Dr. Christison let me very easily off, with a few words about creosote and prussic acid. Sir Charles Bell, a most gentlemanly, kind examinator, gave me a

few questions regarding the diseases for which legs are cut off. And here am I waiting only for the mystic touch of the medicating cap to stand forth to the world—a physician! What the exact etiquette as to the assumption of the title before capping is, I don't know, but as I have *paid the fees*, I make no scruple of fully doctorating myself. Tell any ladies who are about to write me, that any epistles addressed *Mr.* Geo. Wilson, will be sent elsewhere."

"MY DEAR SISTER MARY,—When I last wrote you, I told you I was a physician grub, a caterpillar eating of the coarse food which suits the palate of an imperfect animal. I am now a winged butterfly, that is, a PASSED PHYSICIAN! (Three cheers and a hurrah!)

"Yesterday, between the hours of one and three o'clock, I underwent the transformation, and emerged from my chrysalis state, leaving my case (*i.e.*, £21) behind me, and soared aloft (that is, walked, I did not very well know how) into the blue empyrean (*i.e.*, along the pavement leading from the College to Gayfield Square), in a mood of mind which only those who have tasted of the horrors of an eternal caterpillarity (*i.e.*, of being a *sticked* doctor) hovering before them, can appreciate. But I will close my wings, as yet unsoiled and unfeathered, and come down to the earth, that is to say, I will remember that 'this is my right hand, and that is my left,' that I am sitting in an arm-chair, writing my dearly beloved sister Mary, who is recovering her health among the breezes that float over the rugged Ochils.

"Well, then, in calm and sober seriousness, I am now an M.D., with bright and beautiful visions of gold-headed canes held out to my grasp; of long, tapering fingers, put past muslin curtains, that *the doctor* may feel the fair invalid's pulse; of tendered guineas, and received bank notes, besides honours showered on my laurelled head; and a tale of names added to my Christian cognomen, sufficiently long to draw a saint from heaven, if he got entangled among the A's, and B's, and C's and S.S.S.

"I am overflowing with the milk of human kindness [illegible]

one, and prodigal of good words and benefits to all around me. I am in an ocean of self-contentment, swayed about by every changing impulse; I am a fettered slave with my limbs set free, and my ears undoomed to listen to the music of my chains. In short, though the 'world is all before me where to choose,' and I am rudderless, compassless, unprovided with ammunition, and about to taste of 'the fever, and the strife here, where men sit and hear each other groan,' I am as light-hearted and as gay as if 'heaven had opened on my view,' and I had left 'earth and its dull cares behind me.'

"Like the thirsty convalescent from a malignant distemper, who declared, as he drank his invigorating wine draught, that the gods knew not what nectar was, for they never had the 'yellow fever,' so I say, that you must try the tortures of a medico's fortnight before his examination, before you can revel, like a summer fly, in the feeling of perfect liberty.

"By working devouringly in gulps at my cabbage leaves, I managed to go over a great deal; and though I very nearly knocked myself up with this sort of work, now that it is over I am perfectly well satisfied, glad that I have the power to work double tides when there is a need for it."

From his cousin James, the following congratulatory letter was received:—

"GLASGOW, *5th July* 1839.

"MY DEAR GEORGE,—I received the news of your distinction with very great pleasure, which was the more enhanced as it relieved me of certain doubts and fears I had begun to entertain about your success, for Miss Mackay had not heard of it, and you know I did not hear from home for a long while. I expected you would have let us know, and the only event of sufficient importance to have prevented you from doing so, that occurred to me, was that perhaps, by your close application, you had so etherealized yourself, that you had evanished through your window in a flash of genius, and were perhaps at the moment, when my cogitations were employed about you, twinkling on the tail of the Great Bear. I was debating with myself whether to put it beyond doubt, by a personal examina-

tion of the heavens, when aunt's letter arrived, and certified me that you had at last been put in possession of the great object of your ambition. And what was that? Two letters of the alphabet! Nor would this reward which you proposed to yourself have been so contemptible, if those said letters had been out-of-the-way ones, an A and a Q, two Q's, etc., but as for an M and a D, two of the most commonplace members of the A B C, —to think that they should have been so desired, I should say you were the victim of monomania, though I could scarcely designate by the term *mono*mania what is equalled in its melancholy nature only by its universality. But when we pass from the mere letters to what they may imply, how much truth do we find contained in them! Passing over the common explication, Doctor of Medicine, we have firstly (synonymous with it), Man of Decoctions; secondly, Dedicated to Manslaughter, Deliverer of Many, Deluder of More, Death of Most, and lastly a more agreeable truth, that being a Doctor you are Marriageable. These, especially those preceding the last, I would present to your attention, hoping that the consciousness of what is thus implied in the Degree you have obtained may, like oil upon the waters, serve to moderate the feelings of your joy, and ever, like the aforesaid oil, remain uppermost in your mind. You will now be able, nay, in a manner be compelled to take to other and more congenial studies, for the moment you are struck with the black cap, it is signified that this is the last step you can mount in this department of the Temple of Fame; and the buffet is a gentle hint to move off to some other staircase, where your progress is unimpeded by any such restrictions.

"Wishing you all possible joy of your pair of letters, I remain your affectionate cousin, J. R."

To which George sends in reply an epistle "hazy, because his tobacco is all done," in which he dilates on the troubles of the intermediate state between passing the last examination and obtaining the title of doctor. Of smoking he was very fond, and only abandoned its pleasures when compelled by his broken health so to do. It was no uncommon thing to find the room in which he and a friend or two were assembled so densely filled

with smoke, that only the sound of merry voices and shouts of laughter showed that it was inhabited.

"I am now, as you know, in my chrysalis state; while you were here I was a caterpillar, feeding on the docken leaves and nettle stalks of physic and surgery; and now I am in the transition state between the obscure worm and the brilliant butterfly. I am, as it were, nobody. I doubt momently of my identity, and hold conversations between myself and my non-self; my Master-ship and my Doctor-ship. Doctor I am not yet, for the mystic medicating cap has not yet physicianed me. Mr. I am not, for I have paid out the goodly gold, and run the gauntlet of the searching queries demanded at the hands of aspirants by the doctor-makers. I am neither fish nor fowl, but some strange hybrid, a human bat (vampire is no bad name after all for a blood-sucking medico) a two-legged ornithorynchus, a terrestrial merman, a griffin, a centaur, a hippogriff, or some other 'half-made-up' piece of vitality, disclaimed by perfect creatures of all kinds, and only allowed to hover about the confines, the neutral ground, which belongs to none or to all. I can get on at home tolerably well, for they call me George; but I fear to answer the calls of Mr. or Dr. Wilson, and those who address me seem equally perplexed,—they beckon me with Dr., and when I approach I am saluted as Mr. I am a species of chameleon; I change visibly before those who gaze on me. It is an awful state to be in. I have been combating my existential non-existence with every weapon in my power. I have had my card engraved Dr. G. Wilson, and I gaze on it betimes, when the ignorance of who I am comes over me; the servant is instructed to cry Doctor to me, whenever she sees me musing; and this last recipe I feel the most effectual of the whole. For a few days after I was changed, I thought I was fully fledged, and fluttered away, thinking I was flying; but I was soon brought to my senses, and crammed into my chrysalis case again. I daily become graver and graver. I see myself equipped in professional black, gliding about on noiseless tip-toe, bland and courteous, smiling and hoping and fearing, like the most ancient doctor of them all. I have got a silver-headed

cane by way of preparing myself gradually for the solemn grasp of the gold-headed wand, and I find it very useful. On the first of August, chosen doubtless because the slaves were set free then, I shall be liberated from bondage, and along with some hundred more fledglings, for ever resign the dubious title of medical student, for the dignified one of doctor."

To a young sister he says—

"You will have by this time sufficiently gone over the novelties of Paisley, to feel anxious to hear from home, and as I faithfully promised, I am here faithfully fulfilling my promise of writing you. You tell in your very welcome letter that you dig assiduously in the garden: well, Jessie, dig diligently, you may chance to alight on some hidden treasure, some ancient clay vase full of gold coins, and ancient utensils, and mouldering bones, such as we saw in the Antiquarian Museum. Or you may only disinherit a mole of his paternal estate, and oblige him to emigrate to some Australia, some less crowded and more genial country; or you may interrupt a pleasant party of earthworms, invited to feast on a cabbage stock or a turnip root; or break in on the festivities of a nation of ants, celebrating the birthday of their patriarch, whose name will probably be Antipater (you see I write you as a learned lady). Anyhow, by digging, you will find a treasure, which will be of more value to yourself, and be more highly thought of by all of us, than if you stumbled on the seal of old King Solomon which would give you power over all the genii, and turn the wonders of Aladdin's wonderful lamp into baby rhymes. By digging, you will get what we doctors are said not to like in others, a stock of robust health, which will carry you through the French lessons, and piano playings, and worsted work, of the succeeding winter, and perhaps add a whole year to your existence, by strengthening your bones, and nerves, and muscles. Remember then, my dear Jessie, there's to be no sewing of ladies' fooleries, no showing to strangers of new purse stitches, or novel patterns for footstool covers; but plenty out-door work, walking and sunning and working, delving and digging, hoeing and spading; in short, you must just take and merit the title of one of the

strange beauties, whose portrait, I daresay, you have seen on the playing cards, 'the Queen of Spades.'

"Lady Othello looketh ill; perhaps she misses you; anyhow, she visits me very often, and endangers the safety of my bottles at the window. I rather fear she is in love; but she won't tell the name of her sweetheart, unless it be 'Miau,' a name which she cries aloud till the walls ring with her lover's name."

"A great many folks are going to see us capped, especially young ladies, who desire to behold the wonderful powers of the velvet cap, which by a single touch can transform a thoughtless, foolish, wild, and ill-behaved medical student, into a grave and trustworthy dignified physician, whom mothers and fathers are equally ready to put confidence in. I doubt not, Jessie, that though you greatly enjoyed your visit to the Shows, and now wish yourself joy of the many acquaintances you made among giants and giantesses, dwarfs and fat boys, people with white hair and strange eyes, and the like, that you would wish, notwithstanding, to be here, so as to attend our capping, and see us give to the winds the empty, foolish, and useless title of Mr., now far beneath our dignity.

"But I must not strive to paint in too glowing colours the delights of sights at home, or you will weary of your present stay in a place where a great many things may be seen, scarcely less interesting than many we have here, some of them much more so. Mr. T—, or one of his sons, will take you, I doubt not, to see the looms, those especially set in motion by steam; in which, to judge from the interest you always took in our after-dinner disquisitions anent guns and engines, and clocks and sun-dials, I believe you will be much interested. Indeed, you should let no opportunity slip of watching the ingenious mechanical contrivances which abound in a city like Paisley, where so many fabrics are woven. I look back with pleasure on the time I spent when I was your age, and for years after that epoch, in becoming acquainted with the construction and purposes of machinery. For I found it *then*, not only an innocent amusement and a profitable occupation of hours spent idly by others; but *now*, when for the latter years of my life

my time has been given almost entirely to other things, I have still more felt the value of such occupations of time; for the observation of machinery in motion, the mental struggles before the mode of action is quite understood, the admiration of the ingenuity shown in devising beautiful contrivances to effect desired ends, and still more the endeavour to imitate such or similar mechanical adaptations, develops the imagination and the powers of reflection, it fosters and ripens ingenuity, and all the while exercises on the mind a silent but salutary dominion, which quickens its most useful powers. Do then, my dear Jessie, try to fathom the mysteries of wheels and cranks, and rods and pinions, and strive to acquaint yourself with the *object for which* the wheels move at all, and then the *means by which* the desired motion is effected."

The following description of the capping is from George Wilson's own pen, and may be new to many of our readers :—

"The ceremony, which goes among the students of Edinburgh by the name of 'capping,' is always looked forward to with great interest, and is the only occasion on which the general public, including ladies, take part in academical proceedings. Students of the University of Edinburgh do not wear any academical costume; but on the 1st of August the medical graduates of the year, attired in black gowns, resembling generally those of Oxford and Cambridge, assemble in one of the largest class-rooms in presence of the principal and professors of the University, the magistrates of the city, and a large concourse of spectators of both sexes. The more important parts of the ceremony, are the administration of a solemn oath to the graduates, and the offering up of prayers by the Principal, but as they are couched in Latin, only a small portion of the audience can intelligently follow them. An address in English from one of the medical professors, which is often the occasion of eloquent appeal and important advice, is always listened to with attention. But in the eyes of the students, the chief and indeed only essential part of the process is the 'capping,' which is performed by the Principal, who, as the graduates one by one pass before him, lays on the head of each for a moment, a velvet cap and

utters the words '*Te medicinæ doctorem creo!*'—I create thee doctor of medicine." A foot-note says in addition: "The ceremony referred to above, should, I believe, in strictness of language be termed the *hatting* rather than the *capping;* the hat being the academic symbol of the doctorate; the cap the sign of the *status pupillaris.* Each doctor, also, should have a hat for himself, instead of one serving for all. To modern unacademic eyes, however, accustomed to the stiff material and towering dimensions of our awkward hats, the soft and pliant velvet hat of an older period passes for a cap. Hence the name by which the graduates of Edinburgh, unversed in the mysteries of the diversified graceful caps, hoods, and gowns, of the English Universities, distinguish the solitary ceremony at which once in his college-life, an Edinburgh student of medicine wears for some two hours a gown; and for a moment a doctor's hat."[1]

On the day following he hastens to share the news with the "dear and only brother," who so fully sympathized with every incident in George's career.

"My last letter was very hurried, ill-arranged, and ill-written; the present will be written more leisurely, and will be the more pleasing to you, as it is likely to contain more that will interest you than the former did. Yesterday, the 1st of August, I, and a hundred and eighteen more young graduates, were created doctors of medicine. I send you a list of our names, which you will find to contain the cognomens of several of your friends and acquaintances. You will see that Samuel Brown has got one of the medals; he is the most deserving of the whole four who have been thus crowned. The others were all of them above thirty.

"You will see that my Thesis and John Niven's were among the seven given in (by the professors) as worthy of the prize; from these Samuel Brown's and Carpenter's were chosen, and we must be content with the two stars which flourish at our names. I never expected a prize, because I was soon aware that S. B.'s was a more valuable chemical essay than mine, and

[1] 'Life of Dr. John Reid,' pp. 15, 16.

I knew they would not give two chemical prizes. It is some reward for *our* three days' work, that I was chosen among the few severed from the 119 as worthy of special regard. Christison said of my Thesis, that it was 'very ingenious;' this he said to some friend, for he never expressed an opinion to me, and I have no thought of asking him for praise. Hope criticised it in public the day before, very cautiously, without committing himself as to its value, but seasoned it with a wholesome advice about the delicacy of the experiments, and the propriety of their frequent repetition; but I have no thought of taking his advice, as I am quite satisfied with my experiments and my conclusions. I have to thank him, however, for making a groundless objection to one portion, which will induce me to add another portion to my Thesis, so as to take away the last prop of the false theory. It will be published soon, *i.e.*, in a month or two, in the volume to be issued by the University Club, but separate copies will also be printed; in truth, it is a College law, that if a Thesis be printed, so many copies (forty or seventy) must be sent to the University.

"It is not every author who is provided with readers in this way, and spared the necessity of invoking gentle readers and a generous public. I shall probably (for I am restricted as to room in the Club volume) incorporate a portion of the supplement into the text of the Thesis, which I begin to-morrow to remodel, and leave the rest for a separate paper. By publishing my result in two papers, I shall have the first and most important part, perfect as I hope to make it in itself, free from the objections which may be raised against the second, and might thus draw down undeserved condemnation on the first. Samuel, my kind, estimable friend, will probably go to Birmingham; if he does, he will read my essay to them, as I have no thought of going thither."

Thus were the dreams of youthful years to a great extent realized. Steadily upwards had been the course; unflinching diligence and sturdy perseverance, surmounting difficulties at which a less courageous spirit would have quailed. And often, when looking back on student days, has he in later life ex-

pressed wonder that he passed unscathed through the temptations thickly besetting a medical student's life, and by means of which many who shared with him a brilliant noon-day, have brought an eclipse on their after years, or have sunk in dark and gloomy clouds below the horizon. Much of George's safety may be attributed to early training and pleasant home influences; much also to the happy buoyancy of spirit that never forsook him, while the eager craving after knowledge left no room for baser tastes to develop themselves. Had he been asked to say what shield had proved so efficacious in warding off evil influences, he would doubtless have reminded us of the cradle prayer, for him answered as for Joseph, so that "his bow abode in strength, and the arms of his hands were made strong by the hands of the mighty God of Jacob." "Have not we realized," he said to a sister many years later, "in spite of all our sorrows, and cares, and trials, that we are the children of many prayers?"

CHAPTER V.

WORKING IN HOPE.

"The subtile chymic can divest
And strip the creature naked, till he find
The callow principles within their nest:
There he imparts to them his mind,
Admitted to their bed-chamber, before
They appear trim and drest
To ordinary suitors at the door."

HERBERT.

WHEN the weary climber of Alpine steeps has reached the summit to which his toilsome efforts have long been directed, it is often but to see before him heights still more inaccessible, defying, yet tempting him to scale them. The past is as nothing compared with what is to be accomplished, and only a stout heart and manly purpose will avail. So with the student when the labours of years are crowned with success; the end is but a new beginning, and the goal is harder to be won than in his first career. But, happily, all looks bright in the future to youthful eyes, and hope gives strength to do what to faint hearts would be impossible. In the 'Life' of Dr. Reid we find George Wilson's own experience of this time:—"There are few periods," he says, "more happy in a young doctor's life than those which immediately succeed his graduation. The most diligent student is thankful to escape from the irksomeness of a round of college, hospital, or dispensary duties, which occupy nearly the whole day, during an almost unbroken session of ten months. It can rarely happen that each of the sciences which occupy the attention of the medical student is equally interesting to him, and there must always, in a large school of medicine, be some

teachers who, more or less, try the patience of their reluctant listeners. A natural reaction, also, from the exhaustion of protracted study, and the suspense and anxiety which even in the best prepared, the boldest, and the most hopeful pupils, attend the anticipation of the dreaded ordeal of examination, arrays the future in rainbow colours." The necessity, however, of making his way in the world permitted no rest on the summit of this Hill Difficulty, but compelled him to scan the horizon in search of some field for his exertions. The day after graduation, he tells Daniel of various openings in prospect, such as a promise of lecturing in the approaching winter to a provincial association at St. Andrews, an offer made to the Secretary of the Board of Arts and Manufactures to teach chemistry to the young artists, and an invitation to lecture at the School of Arts, Haddington. These schemes all proved visionary, but, "for the sake of practice, and to be doing something," he hopes to appear as a lecturer on some provincial arena in winter. The letter mentioning those details thus winds up:—"I shall here, for your amusement, record a story told us by a dissenting minister. Rowland Hill, once preaching on the necessity of unity among Christians, told his people that he had a dream the night before, and thought he had gone to heaven. When he had arrived there, he asked the angel to show him where the Episcopalians were, as he should like to see them first. The angel replied that there were no Episcopalians there. "Well," said Rowland, "I know a great many who *intended* and *expected* to be here." However, as there were none of them, he asked for the Presbyterians. There were none of them either; then for the Independents, there were none; then for the Baptists,—"There are none," was the answer. "Where, then, are the Christians?" "Oh, the *Christians*," quoth the angel, "they are all here!"

Towards the close of the month, George, in accomplishment of a cherished desire, attended the meeting of the British Association for the Advancement of Science, held that year in Birmingham. His friend and fellow-graduate, Samuel Brown, accompanied him. He had the good fortune, on his arrival, to be introduced to the well-known philanthropist, Mr. Joseph

Sturge, and resided under his hospitable roof during his stay there. The recollections of this visit were always associated with pleasant thoughts of his host,—"As amiable, gentle, and intelligent a man as I ever met." Mr Sturge's kindly thoughtfulness for his guests, and the graceful manners of his family circle, left a peculiarly pleasant impression on George's mind. He could not fail to enjoy himself, where all conspired to give pleasure. His joyous letters, written near the door of a conservatory, seem redolent of the rich and rare flowers beside him; while the kindly reception he and Dr. Brown met with from the members of the Association, left little wanting to the completion of their most sanguine hopes. The only disappointment arose from finding the men of whose writings he had been a devoted admirer, fall in some instances so far short of his ideal as to cause a revulsion of feeling that hastened his departure. Who can tell what influences for life were then acting on his susceptible nature?

So deep was the impression left by contact with Mr. Sturge, that his death, in 1859, seemed the loss of a friend, though they had never met or held any intercourse in those intervening twenty years. Lines to his memory, by J. Whittier, gave George much pleasure by their beauty and their truthfulness. The length of the poem permits only a slight quotation from them.

"The very gentlest of all human natures
He joined to courage strong,
And love outreaching unto all God's creatures,
With sturdy hate of wrong.

"Tender as woman; manliness and meekness
In him were so allied,
That they who judged him by his strength or weakness
Saw but a single side.

"Men failed, betrayed him: but his zeal seemed nourished
By failure and by fall;
Still a large faith in human kind he cherished,
And in God's love for all.

"And now he rests: his greatness and his sweetness
No more shall seem at strife;
And death has moulded into calm completeness
The statue of his life."

To those who knew George Wilson best, those lines will seem as applicable to him as to the noble man by whose death they were called forth.

In writing home, particulars are given of the appearance at the Chemical Section of the two friends:—"We were received as courteously as we could have wished, and attended to with interest and patience. You know that I spent my time up to the last moment of leaving, in writing out an abstract of my Thesis for the Association; but, after reaching Birmingham, we found that long papers were in bad odour, and they admitted so many ladies to the section meetings, that we gave up the idea of reading, and resolved to speak our papers to the people. This idea was only formed the night before, and I had no time to arrange my thoughts; but we were fortunately driven desperate, and so achieved wonders. Our names were read out last, the day before we were appointed to read; accordingly, Samuel and I were sitting together after the section had begun, talking about our matters, when in came Playfair bounce from the section to say that my name had been read out, and they were waiting for me. Away I ran, and before I very well knew where I was, I was mounted on a rostrum before some hundred strangers. Though somewhat flurried at first, I speedily acquired courage and coolness enough to progress satisfactorily, in which comfortable progression I was greatly aided by the attentive, watchful looks of some of the more intelligent among them. When I came down, Playfair said I had done 'nobly.' If I were not writing for a fond mother's eye, I should be ashamed to say all this; but I know you will be anxious to know everything about this journey. Professor Graham, Dr. R. D. Thomson, the Birmingham secretary, and Professor Clark of Aberdeen, all expressed their interest in the paper, and their satisfaction with its proofs. We both of us intended to have read or spoken before them other communications, but business increased on our hands (that is, section business), and we could not obtain an opportunity of addressing them a second time." To George Wilson's friend and fellow-chemist, Dr. J. H. Gladstone, London, we are indebted for detailed notices of many of his scientific inves-

tigations. To these we refer the reader for further mention of this paper.[1]

It was at this meeting that the difficulty experienced by the younger scientific men in gaining the access they desired to the society of those whose fame was already established, together with the expense of hotel charges, led to their dining together daily at a small tavern where Edward Forbes had established himself. The tavern happened to be named the "Red Lion," and so pleasant was this arrangement found to be, that, before leaving Birmingham, it was decided that at every future meeting of the British Association, there should be a Red Lion dinner. At this dinner George Wilson never failed to be present when it was in his power, though with the club afterwards formed in London, and bearing the same name, he had no connexion.

From Birmingham, George went to pay a short visit to his brother, not without a faint hope that in the great metropolis a sphere might be found for his energies, leading to advancement for the future. "Now for London," is the close of his first letter after reaching it; "it is the old place, as noisy and as busy as ever: its streets crowded, as when I left it, with handsome men and beautiful women, and idlers like me, and busy people like Daniel, and fools like ——, but I'll not say who. I wonder to find it so little changed, forgetting that I have only been four months absent." Daniel reports of him:—"George is certainly very much improved; his successful passing, and all other agreeable circumstances, have combined to produce perfect health and excellent spirits. He came upon me without the previous notice he had promised to give, and startled and delighted me with his company. I hope his visit will be productive of good in every way, and that you will get him home in very, very different health and spirits from those in which he returned after the very uncomfortable winter we shared together before."

During the three weeks of this visit the brothers spent as much as possible of the time together, George going out "only to look after something to do, striving to get wriggled into some corner, however small, with the hopes of getting a bigger hole thereafter."

[1] See APPENDIX.

Having learned at Birmingham that a college of civil engineers was about to be formed in London, he made inquiries about it, but found it offered no post suitable for him. Other attempts fared no better. Wandering for three days in search of Professor Daniel of King's College, to whom he had an introduction, was at last repaid by the pleasure of a warm and courteous reception. The long desired introduction to Faraday was also enjoyed, and of a visit by appointment to him George says,—"Faraday was very kind; showed me his whole laboratory with labours going on, and talked frankly and kindly; but to the usual question of something to do, gave the usual round O answer, and treated me to a just, but not very cheering animadversion on the Government of this country, which, unlike that of every other civilized country, will give no help to scientific inquiry, and will afford no aid or means of study for young chemists; all my efforts, therefore, have been unsuccessful. This Fog-Babylon will have none of me, casts me out of her bosom and drives me home again; so I am not only attracted to you by ties innumerable, but I am impelled towards you by repulsions innumerable, and with the best grace I can put on the matter, will be quickly back among you." Of his return home by steamer he tells Daniel,—"The weather was very pleasant all the way, bright and sunny, and the wind light and in our favour. The company, moreover, was very pleasant; as I stalked along the quarter-deck I was a little surprised to hear the names of Carlyle, Goethe, and Richter, passing from mouth to mouth of a group of gentlemen walking there. I drew nearer and heard the French Revolution talked of, on which I requested leave to join the conversation, and a most interesting one it was. The two chief speakers in it turned out to be Mr. Terrot, the Episcopalian minister of St Paul's, Edinburgh, and Mr. MacDougall, one of the candidates for the Logic Chair, and two very clever fellows they are. . . . . Terrot is very intelligent and interesting, and exceedingly frank and free, so that I was happily situated. He told us a college incident of English discipline, which may amuse you. The Master of Trinity College, Cambridge, of which he was a fellow, was a great stickler for every point of etiquette, college salutation, and the like. One of the graduates, a Yorkshireman

famed for his awkward simplicity, chanced to walk up one side of the College quadrangle as the Master crossed the court obliquely. The Yorkshireman, with unbent head and unlifted cap, walked on, whereupon the ceremonious Master addressed him, 'Sir, have you no salutation to give me? Are you not aware that such is required from every student to his college superior when he meets him?' 'Oh, yes,' said the Yorkshireman; 'but I did not *meet* you; you were coming *diagonally!!!*' The Master added, by way of comment, the declaration, 'You know that I don't care particularly for these things, but College rules must be attended to.' 'Awell, my Lord, I think very little o' them mysel,' an answer which fairly overset the Master's gravity, and he laughed outright." The next letter to Daniel is given almost entire:—

"*October* 7, 1839.

"I was most unexpectedly summoned away to Penicuik[1] as soon as I reached Edinburgh, so that I could not write you before this time, when Dr. Williamson's departure for London gives me a welcome opportunity.

"I did not intend to have gone to the country after coming home from London, being unwilling to devote more time to leisure. But John [Niven] was just waiting with an earnest repetition of the previously-made invitation to go to Penicuik; and when he met my attempted refusal with the declaration that it was a long-made promise, I, who have been to go out every season for the last four years, could not refuse, and so I went. I stayed till last night (Sunday), when John and I walked in together; and I should very shamefully repay the great kindness shown me, if I did not heartily confess that I enjoyed myself very much.

"As it is, moreover, you must make the most of this preface; for as it is declared that dealers in oxen, when they dream, dream of oxen, so must I, lately of Penicuik, write Penicuikly, and be content to dilate on things 'unattempted yet in prose or rhyme,' which, whatever else they may want, will yet be rife in hearty, life-like reality, and the description of marked indivi-

[1] Penicuik is a small country town, about nine miles from Edinburgh.

duality. As I had the arm and the society of Dr. John Niven, the use of his pony whenever I wished, the society of his aunt, sisters, and nieces, over and above his good uncle, the trustworthy servants, and the old and young dogs, it would have been my own fault if I had not evolved from these elements both profit and amusement; and seeing I was a guest (however unworthy) whom they all 'delighted to honour,' from Miss Abernethy to the old servant, who came to shake hands with me, and congratulate me on my doctorate, you may imagine that an accommodating passivity would have served to secure my happiness. As it was, what with a grand tea-party of auld Scotch farmer folks from the hills, whose conversation was singularly broad and racy, and startling, too, after a southern absence,—it completely knocked out of my ears every English accent I had got hold of. Oh, to have had H. G. there, listening to the strange Babylonish dialect of old and young; how his ears would have tingled had he heard a song of Gala (pronounced Gaulay) Water, or another of a fox stealing a goose, which ended in one line, with the detail of the goose being carried to foxdom, and 'the young ones *pyked* the banes o'.—What with pony rides,—still more, what with country walks through the grounds around with the young ladies, from whom I always chose my kind, accomplished, and lady-like friend, Miss Niven, as my companion, 'time, as he passed us, had a dove's wing, unsoiled and swift, and of a silken sound;' and at night we nestled round a fire, and I read the last number of 'Nickleby' aloud, or we played at whist, or chatted together; and so the time wore swiftly away, helped to a swifter conclusion by the occurrence of a fair on the Friday, where, if there were no very huge shows or Thespian booths, there was the ancient merry-go-round, and a game which is called, in the elegant language of Penicuik, the Roly-Poly, a game like nine-pins, superintended by most blackguard-looking fellows, where sturdy ploughmen played for cakes of gingerbread. The evening was ended by a grand dance in the barn or Gardener's Lodge, where by the payment of a penny you obtained the right to stand on the floor, and by the possession of good looks, good manners, or enticing speech, the claim to the rosy hand of some Pamela, radiant with

the blushes, the sempiternal blushes, which the duties of the dairy and the kitchen imprint on Scottish maidens' cheeks. Whether I took my place on the floor, enchanted by the tones of two unrosined fiddles, and footed nimbly with un-Cinderella-footed dames, and was envied by the rustics for carrying off their sweethearts, and offered to fight them all round, and would have done it (with John Niven's assistance) had not the weeping wenches clustered round me and forbade it; whether I did this or no, modesty and brevity forbid me to mention; and history reminds me, that when the chronicles of Penicuik come to be written, and the names of her illustrious natives or visitors to be marshalled in order, 'I shall strike the stars with my sublime head.' So much for an idle week. Will you, Daniel, at some early time, send me Whately's 'Logic,' which will be of service, and 'Ingram' or any other book on algebra I have left behind me; they would be of great service, as I have taken out a mathematical class, and begin logic very speedily."

In the close of October, after alluding to troubles pressing heavily on the family circle, in reference to which he says,—"We are men, and will strive to look things in the face; to bear is to conquer our fate," he goes on to tell Daniel of his immediate plans and prospects: "I am sure you will approve of my continuing to study this winter, on the plea of better fitting myself thereby for fruitful work. You may be certain I have convinced myself of this before I thought of classes. Further, you know that I have striven to get a situation and have failed, and at present I would gladly take one could I get it. Limiting that gladness, however, by two conditions, the one that it should not take me from Edinburgh, for the sake of Mary, who is still in a very precarious state of health, and, now that Catherine and B. are gone, has no friend near her with whom to commune; the other, that it should be worth taking, in the sense of leading to something better, for it would be folly for me to take a post which should be trifling, and by consuming my time, prevent me from qualifying myself for another and better. But I may perhaps get some Saturday lecturing in the provincial towns about. This I intend, if possible, to obtain.

"Meanwhile, I have been working at mathematics and algebra, attending a class, and making some progress; in mathematics, getting on sufficiently well, but a good deal stumbled in algebra by my sheer ignorance of common arithmetic. But being engaged at home in the revision of that, I look to quickly making up all lee-way, and succeeding in algebraic computation fully. . . . I shall have little time for letters this winter, and only on *short paper*."

Notwithstanding this prudent warning, a letter on foolscap was not long in following, with no lack of interesting information, and fun in addition:—

"That penny postage bill, when will it come into operation, and save poor men like you and me the dreadful thought that before one can fulfil brotherly duties, one must either disburse coins ourselves, or make a demand on the purse of another? Such thought working in my brain, as it has been likewise, I doubt not, in yours, has hitherto delayed my writing; and now I am not altogether hopeless of a letter coming from you to-day, before this is put in the Post-Office.

"I have been very busy, writing till my side was stiff and cramped with stooping, otherwise I should have written you long ago, the mere consumption of time being not so complete, that I could not have cut off half an hour to write you, but the way in which the time was taken up left me little ability or wish for further scribbling. I have finished and read at the Physical Society the Introductory Discourse I spoke of, to the great delight of all present. I shall send it to you as soon as I can get a copy made by John M'Lure. I am satisfied with it myself, and think you will like many parts of it. I have striven in it above all things to be earnest, to have something to teach whereon to expend words; not words built up like ice palaces or frostwork, to which here and there one may tag a thought or two. I have neither been a quack nor a hypocrite, laying claims to no virtues or talents I did not possess, but have been anxious to be taken and estimated as I am. I think you will be pleased with the consideration of 'The Desire of Fame;' but of this more hereafter, when I send you the paper itself. Besides the

Snowdrop verses (which I shall send to you by the first parcel), those on 'The Skull, 'A Song on the Seasons,' and 'Chalybeate Rhymes' for Miss S.'s birthday, I have written a Song to the Ibis on its landing in Egypt, which I hope to recover from its present darkness, it having gone mysteriously amissing. I shall also, at some early period, send you the 'Sleep of the Hyacinth,' which I shall next labour at. But in the meanwhile, I have forsworn all rhyming, and in proof thereof have issued the following advertisement:—

"'(Sign of the Winged Ass.)

"'George Wilson returns thanks to his friends and the public in general for the encouragement he has received since he began the rhyming business on his own account; at the same time he takes this opportunity of informing them that he has just returned from a professional tour to the cities of London, Birmingham, and Penicuik, from which he has brought a large stock of new ideas, so that he is prepared to execute orders to any amount. Every article sent from the house of G. W. guaranteed perfect, and warranted to jingle well. The strictest attention paid to points and commas; likewise to morality and grammar.

"'At the same time, G. W. thinks it proper to inform his friends, that he is about entirely to abandon the rhyming line, and open *premises* in logic and mathematics; so that an early application will be necessary to prevent disappointment.

"'In consequence of retiring from business, G. W. has on hand a large stock of love-letters, consisting of proposals, refusals, acceptances, and *juste milieu*, milk-and-water epistles, written in the most approved style, which will be sold in lots to suit intending purchasers. At the same time, a quantity of acrostics, including Christian and surname, odes to love-locks, and sonnets to mistresses' eyebrows, will be disposed of at reduced prices.

"'Country orders punctually attended to.

"'No connexion with any other house.

"'Hill of Parnassus, Highest Cliff,

"'1400th Olympiad.'

"So much for the non-rhyming and what I am not to do. As to what I am to do, that may be speedily told. I have begun German with a very intelligent teacher, Mr. Kombst; James Russell, John Niven, Mr. Skae, and another, are in the class, and we get on very nicely; we have just begun, so that as to work to be done I cannot speak. Meanwhile, we find our method of proceeding very pleasant, and the sounds of the German are melodious and pleasing to my Scotch ears. We have fairly settled at once to Schiller's Wilhelm Tell, learning away at the knotty grammar, which is puzzling enough; but the striking similarity between the German phrases and our own Saxon words and broad Scotch, is a great help to the rendering of sentences; indeed the construction is often almost identical with English, and never, so far as I have yet gone, very anomalous. At all events, I love the language, and will learn it. I hated French, a poor, pingling, crack-voiced, monkey-like dialect, which I never had patience to acquire; though the foolishness of not studying so valuable a key to knowledge is great; but I can use it at least as a picklock, and I shall fall to the grammar sturdily soon; at present I have quite enough on hand.

"They have sent me the red ribbon, and so constituted me one of the friends of the Brotherhood of Truth. The ribbon I now wear, to the great wonderment and offence of many of my well-wishers, who see damage to my character from any connexion with the dubious persons composing it; but my character does not hang on a ribbon, and when I called on Forbes, he spoke to me in the kindest manner, explained the helping, unselfish character of the Society, its freedom from forms and vices; and wound it up by offering and promising to do everything to help me, especially towards getting a lectureship in the provincial towns, perhaps Liverpool. At present there are unions in France, Germany, England, and India, so that the craft thrives. Some of the best fellows about College are in it, to know whom were reward enough.

"Mary sends you her kindest love. She is not better, I am sorry to say, but confined to bed a large portion of the day. I fear you will come home to a sad household; but we will hope the best, and we shall all be very glad to see you."

The essay on "The Desire of Fame" remains in an imperfect state amongst George Wilson's papers. His penmanship was very different in those days from the round clear writing of later years, when repeated attacks of inflammation in the eyes made larger characters more pleasing to himself; and when the impetuosity of youth being calmed down, thoughts did not so vehemently outstrip the pen. Of the copyist mentioned, Daniel gives some account:—

"John M'Lure, referred to in this letter, was a pensioner of George's and mine years before I left Edinburgh. He was a worthy, pious old man with a cork leg, and his eyesight fast failing him; a most patient, contented creature. He had been a lawyer's clerk, and wrote a neat, formal hand, which was the very opposite of the scrawly penmanship our own everlasting scribblements had begot of our hands. Our first introduction to the old man was in the capacity here referred to, as converter into readable MS. of some of our competing essays. It occurred to us one Saturday night over our late cup of tea (time probably near twelve, midnight), that a remark of old John's had looked forward to the small modicum of money that would be due him for a bit of work then in hand. Acting on the thought, we hunted out the old man on the Sunday morning in his garret, at General's Entry,[1] Bristo Street, carrying with us certain supplies begged from mother for improvising a breakfast; and to our sorrow and pleasure we found John reading his Bible, without a morsel in the house, or the prospect of breaking his fast that day.

"Old John M'Lure rises before my mind. He was a source of great amusement to us. His under lip projected considerably, and he had acquired a habit, from his mode of walking with his cork-leg, of compressing his lips, with a smack, between every few words. His ideas were as few as his

[1] General's Entry received its name from a very old and interesting house, which was the town residence of General Monk, while his head-quarters were at Dalkeith Palace. For a long time it was the residence of the Stair family, and afterwards was notorious for containing the first billiard table in Edinburgh. Here, too, was born Dr. Woodrow, the African traveller, before its rooms and attics came into use by such inhabitants as poor John M'Lure. It has now been removed to make way for tradesmen's houses.

wants; and his utterances were compressed into sententious commonplaces of an exceedingly matter-of-fact and simple character, always wound up with a smack of his lips and a slap on his cork-leg. When he had nothing else to do, he diligently employed some mechanical genius he was persuaded he possessed, in effecting improvements on his cork-leg, whereby he gradually converted it into a mass of timber and iron hoops, fitter to have served as an anchor than a help to locomotion! Many a laughing argument we had with John about his 'improvements,' the chief object of which was to draw forth one of his grave matter-of-fact aphorisms; for John never laughed, or perceived that anybody else did. He remained an object of interest and kindly help on George's part as long as he lived."

The brotherhood referred to in this letter was an object of deep interest to George Wilson, and exercised an influence over him so beneficial in many respects, that we cannot pass it over without special notice. It arose out of the association of students who edited the 'Maga,' spoken of in the preceding chapter. Various records of its commencement exist among the private papers of the Society. In an address to its members, by the chief office-bearer in 1838, its formation is thus mentioned:— "Established by a few congenial souls to commune together, it was first called the Maga Club; its objects were literature and good fellowship. The principles which regulated it, however, were so excellent that many craved an admittance into it, and its objects became enlarged, its aim more pretending; from a club it rose to a brotherhood,— a brotherhood devoted to the search of truth in every department of knowledge."

Though thus called a club, there was no institution of any kind formed until the Order was founded. The contributors to the 'Maga' in 1834 and 1835 were accustomed to meet weekly for the editing of this publication, and one evening after they had left, Forbes drew up a paper which proved the germ of the Order, embodying its first principles. Dr. Bennett, in his Memoir of Edward Forbes,[1] says of the students composing his circle of friends, "There was a geniality and good fellowship thrown over their scientific, literary, and professional discussions; an

[1] 'Monthly Journal of Medicine,' January 1855.

intermingling of wit, poetry, song, and good sense at their convivial meetings; a total absence of jealousy, and a strong desire for one another's advancement, which not only cemented their friendship, but exercised a great influence on their subsequent career. . . . . Such, indeed, were the strong feelings of friendship and unity of sentiment which existed in this group of students, that a Society or Order was at length formed."

In the second volume of the 'Maga' there are frequent references to this Society, its motto, and insignia. The former ΟΙΝΟΣ, ΕΡΩΣ, ΜΑΘΗΣΙΣ,—Wine, Love, and Learning, caused it to be called occasionally the "Oineromathic Brotherhood," but this name its members speedily disclaimed, announcing themselves as "The Universal Brotherhood of Friends of Truth." Its aims, so far from being selfish, were the regeneration of the world, by means of the "wisdom of heaven shrined in matter," being unfolded and interpreted by each brother. They are expressed in the following manifesto, afterwards published:—"The highest aim of man is the discovery of the truth; the search after truth is his noblest occupation. It is more—it is his duty. Every step onwards we take in science and learning tells us how nearly all sciences are connected. There is a deep philosophy in that connexion yet undeveloped—a philosophy of the utmost moment to man; let us seek it out. The world in which we live is a beautiful world, and the Spirit of Omnipotence has given us many pleasures and blessings; shall we not enjoy them? Let us refresh ourselves with them thankfully, whilst we go forth in our search after truth. We are all brethren, but it has pleased God variously to endow our minds. Some delight in one thing, some in another: some work for the good of the body, and some for the good of the soul. Let us all work together in fellowship for our mutual happiness and joy. Wherefore should men quarrel one with another, because they hold different doctrines? Such as seek for truth in the right spirit sympathize with each other, and however opposite may be their present opinions, revile them not, but assist in their development, knowing, however wide apart may seem the paths they have chosen, one goal is aimed at, and if persevering, both must meet in the one wished-for temple. Let those who feel the spirit to develop the wisdom

of creation, and to act for the good of their fellow-men, strong within them, unite together in a bond of fellowship, each brother devoting his time and his energies to the department for which he feels and proves himself best fitted, communicating his knowledge to all, so that all may benefit thereby, casting away selfishness and enforcing precepts of love. By such means glory shall accrue to his Order, so that it may wax powerful in intellectual strength, and become a mental and a moral safeguard to the world, and a bond of union among all nations. Such is our Brotherhood."

The chief dignitary was entitled Archimagus, or Grand Master; under him were three Grand Masters to aid in directing the affairs of the brotherhood. The "Roseate Band" was a rose-coloured ribbon, three-quarters of an inch in breadth, made expressly for them at St. Etienne, and having woven into its texture the mystic letters, M. E. O. in black, surrounded by a holly wreath in green. A star in black, with red triangle in the centre, and a black shield, with red band crossing it diagonally, were placed alternately between each group of letters. The ribbon is beautiful as a work of art, and was worn by each member of the society.

As its original founders were men whose talents gave them a high place in the Edinburgh University, entrance to their circle was eagerly desired by their fellow-students. Great care, however, was exercised in admitting brethren, and the indispensable qualifications were not only evidences of mental power and acquirements, but high moral character.

After all preliminary investigations had been satisfactorily settled, the applicant was admitted to the possession of a ribbon, and the title "Associate." This was a state of probation, longer or shorter, as the case might be, and when proofs of talent, energy, and interest in promoting the designs of the fraternity, united to blameless moral conduct, had been evinced, the title of "Triangle" was reached, constituting the happy recipient of a silver triangle, having the motto engraved on it, with clasp (to be worn pendant from a short red ribbon on the left side of the coat), a *bona fide* brother, entitled to take part in all proceedings. In April 1838, Edward Forbes counsels the aspirants to the

Triangle "to occupy themselves during the summer, so that the glory of the Order may be increased, and the principles take root in the hearts of men. Except in very rare and peculiar circumstances, positive distinction and public reputation constitute the only test by which the claim to that honour can be tried." The ribbon was worn on all occasions, crossing the bosom conspicuously, and attracting remarks of wonder not unmixed with suspicion, towards the wearer. The triangle was reserved for state occasions, and in addition to it, the original members had a silver star to be worn below it.

The high tone of morality exhibited in the addresses delivered from time to time by the grand masters, and the true chivalry pervading all their aims, call for our admiration, and show how strong was the stimulant to youthful effort afforded by such a fellowship. Two extracts will best illustrate this. Both are from addresses by Edward Forbes, who was the soul of the Brotherhood, his interest in it being apparently so truly heartfelt, that the absence of years caused no diminution in the loving care and watchfulness shown by him in its early existence. In 1838, on the 9th day of the third month, the day selected for their yearly meeting, he says, "The brethren are earnestly exhorted to follow out the principles of the Order, to exert their abilities to the utmost of their power for its honour and the good of mankind, and to set such a moral example that the world may respect and honour the Brotherhood to which they belong;" and at the close of the third year, he winds up an address as follows:—"Let us always so conduct ourselves that the intellectually good, whose good opinion we should ever strive to gain, may have nothing to complain against us, being ever mindful of that canon of our Order, which bids every one of the brethren 'discountenance vice, and act according to his conscience.'

"Paul, Romans i. 20, 'For the invisible things of him from the creation of the world are clearly seen, being understood by the things that are made, even his eternal power and Godhead;' xii. 10, 'Be kindly affectioned one to another in brotherly love: in honour preferring one another.'"

Meetings were held frequently by the brethren; and not only was a kindly care shown by them to one another, but a watchful

discipline exercised towards any deflections from right conduct and the "true philosophy." Edinburgh was the head-quarters, but its realm was the world, without distinction of rank or nation. Before long, branches were formed in many parts, on each member the duty devolving of kindness, to the utmost extent of his power, to every wearer of the roseate band.

To George Wilson it was a great pleasure to be one of this fraternity. He was proposed for admission by his friend Samuel Brown, and his qualifications stand on the minutes of the Society thus: "Distinguished as a chemist in the higher ranks of chemistry, distinguished himself highly at the British Association 1839, expresses a desire to enter, and is known to understand the principles." On these grounds was he welcomed as an Associate, receiving before long the coveted Triangle. The maximum as to numbers seems to have approached one hundred; and of the youthful band composing this union, the greater number have amply fulfilled the purposes to which they were pledged. Sufficient proof of this may be found in the fact, that six of them have been chosen to fill chairs in the University in which they were students. Professors Goodsir, Bennett, Blackie, Edward Forbes, Lyon Playfair, and George Wilson, need no one to claim merit for them; while elsewhere the brethren have not less distinguished themselves. Amongst them we find the names of Professor Day, St. Andrews; Professor Ramsay of the Geological Survey; Dr. Nicholas Tyacke of Chichester; the Rev. Joseph Goodsir, and his brother Henry Goodsir, who went out as Naturalist in the fatal Arctic Expedition under Sir John Franklin; Dr. Giraud, professor of Botany and Chemistry in Bombay; Dr. John Percy, London; Dr. Falconer of Bath; Dr. Stanger, of the Niger Expedition in 1841; Dr. Wright of Birmingham; Dr. Embleton of Newcastle; Dr. Samuel Brown; and Professor Daniel Wilson, Toronto. In such a union of genius, wit, and fancy, each adding to the general store by contributions from his special science, it may readily be supposed how iron would sharpen iron, and love beget love; while the discoveries in science, and the aims of each one, would rouse all to vigour in their various departments. Their social enjoyments were also pleasant features of the union. Some of the brethren

were possessed of high musical attainments, of which a record remains in a song, of which we give a few verses, the words composed by Edward Forbes, and the music, with arrangements for pianoforte, by John Hughes Bennett, dedicated by them to the brothers in O. E. M., and sung for the first time at the yearly festival of 1836 :—

" Fill ye up a brimming glass,
Jolly brother students,
Ere you let the bottle pass,
Jolly brother students !

" To the King, with three times three !
To the monarch of the free !
Supernaculum to be,
Jolly brother students !
Fill ye up, etc.

" Alma Mater, if you please,
Her professors and degrees,
And our rights and liberties,
Jolly brother students !
Fill ye up, etc.

" To the maids whose love we prize,
In the sunshine of whose eyes
Earth again is Paradise,
Jolly brother students !
Fill ye up, etc.

" Here's our sacred triune sign,
And the words that on it shine,
'LEARNING, LOVE, AND ROSY WINE,'
Jolly brother students !
Fill ye up," etc.

How often might George Wilson have been heard in those days humming the beautiful air of this song, while carrying on experiments. It was a great favourite, while he himself was wont to contribute " Old King Cole," as his share in the musical department, acquiring a wonderful reputation on the strength of this one song. Edward Forbes's inimitable comic ditties, given in a manner peculiar to himself, were a rich and ever-varying treat, which none failed to enjoy. George filled the post of joint-secretary for some time ; and after the Rev. Joseph Goodsir left town, he continued the duties they had conjointly performed.

The original members of this Society being speedily scattered far and wide, and its members sorely thinned by death, its pristine glory and vigour gradually faded. Edward Forbes, through years of absence, watched over its interests with parental solicitude; and even so late as 1855, after his return to Edinburgh, meetings were held of the brethren. In name it still lives, but its utopian aims having no essence of true life in them, can only be considered as scaffolding, helpful in building up wise and noble men, but to be put aside as relics of the past when that end is accomplished.

The comparative leisure of this winter permitted George to cultivate the society of a few choice friends. In addition to those already named as on intimate terms, there were John Goodsir, George Day, now of St. Andrews, David Skae (Dr. Skae, Morningside, Edinburgh), Edward Forbes, and one or two more, with whom much joyous and profitable fellowship was maintained. His cousin, James Russell, was now one of Sir William Hamilton's most distinguished pupils, and through his introduction a valuable acquisition was gained to the circle of friends. A student from the country—a year or two James Russell's senior, first known to him as a competitor in the Humanity Class of 1837-8--had become his almost daily companion; and the introduction of John Cairns (the Rev. Dr. Cairns, Berwick) to the rest of the family circle was welcomed with pleasure by each of its members. In the subsequent years to fall under our notice it will be seen how powerfully intercourse with their common friend influenced the character of the two cousins.

In November George tells his brother that—"The having a winter of peaceful study is a great boon, which would atone for many discomforts. And as I continue to make progress, slowly, yet surely, in what I am studying, I am quite contented and happy. The Introductory Discourse [that on the Desire of Fame] is making the round of a few friends here of both sexes, so that I cannot send it at this time, but it shall be despatched very soon. Meanwhile, besides praise from many quarters, it has procured me the Presidentship of the Physical Society. There are four presidents; I am the third. I was equal in

votes with the second, and above the fourth, an older member. In truth, as I was almost the youngest member, and received the chair without request or canvassing in the least, altogether unexpectedly, I value the honour, and I expect to derive from my place many benefits in my prosecution of science. In virtue of my office, which is no sinecure, I have got the pleasant task of drawing up a report of the recent progress of chemistry and geology, besides inaugural addresses and such like. As the Physical is a Royal Chartered Society, including an elder and a superior class of students, and as it reports its Transactions in the public newspapers, there is more good to be gained from it than from any other of the junior societies.[1]

"There is some prospect afar off, but not uncertain, of lecturing being got, so that I work hopefully onwards. The Snowdrop piece, my farewell rhyme, has greatly delighted the ladies who have read it; and two young friends, Messrs. Giraud and Shaw, amiable, kind-hearted, accomplished fellows, have been fighting for the autograph scrawl, so that I hope to please you with it. . . . .

"I am assured by Miss —— that the Hampshire ladies are not of the sort we have found most of the English girls. But a story she tells with great glee against her brother may show, unsentimental and equestrian though they are, that they are somewhat of the same cast. It appears that, on some occasion, N— and his sister, and some of their English friends, had been coming home late in the evening, in a close covered waggon. One young lady, with whom N— had been very gracious, suddenly put out her hand, and, grasping Miss ——'s, was proceeding to give it a very loving hieroglyphic squeeze, when, feeling

[1] The work of this session comprised six papers read to the Royal Physical Society on the following subjects:—'The Motives which prompt to the Study of Science;' 'The Photogenic Decomposition of Water by Chlorine, Bromine, and Iodine;' 'The Value of Balard's Hypochlorous Acid as a Bleaching Agent;' 'Report on the Progress of Chemistry, in Two Parts—Part I., On its Recent Application to the Arts; Part II., On its Recent Application to the Production of Light for Economical Purposes;' 'On the Decomposing Powers of Hydrogen as a Metal, and its Relations to the Constitution of Haloid Salts;' 'On the Solution of Gases in Water, and its Relation to Pneumatic Inquiries.'

To the Royal Medical Society he also read a paper on the 'Non-electric Character of the Light of the *Pennatula Phosphorea*.'

it to be a lady's, she drew back her hand with a scream. The only explanation Miss —— can give is, that N— had been squeezing her hand, and that she was striving to return the shake. From N— nothing can be got, but he confesses that papa, fearing something, would not allow him to walk alone with his daughter. . . . Let us take off our gossamers (I have a four-and-sixpenny one) and hurrah for the 5th of December and the fourpenny letters."

On December 13th he says—

"I have not acknowledged the receipt of your kind and most welcome fourpenny letter in the way I should have done; and I have but a sorry apology to make for myself. I expected to have answered it long before this, but this whole week my time has been taken up in the most unsatisfactory way, so that I have little pleasure in looking back on it. I went out to supper on Monday night, to meet an unfortunate I could serve in some way; on Tuesday the Physical Society took me away from home; on Wednesday I refused an invitation to tea, and prepared for study, was sitting down to read, when in came Macgillivray. I had scarcely shown him the courtesies of friendship, when there arrived a note asking me to sup with the Presidents of the other Societies, at Mrs. Shaw's house. Off I went—sang King Cole (which is much admired and encored here)—got home at two, and next evening the Unfortunate came to take tea with me, and left at half-past ten —with barely time to learn a proposition in Euclid, and make up for lost time. So here is Friday night, and having got home from my German class, I sit down to begin the *first* rational performance of the week. The above description will satisfy your request that I should write of myself. Let me now write of you and your affairs."

In the beginning of the year 1840 a bright spot becomes visible in the horizon. "Two days ago I heard from a young friend that Dr. D. B. Reid, the chemist, is to leave Edinburgh for London at the end of this winter. This has set me seriously thinking about beginning to teach chemistry here next winter. Many friends urge me to it, and if I had the capital I would risk my reputation on it." About a week later he asks Daniel,

—"Do you remember my poor old friend the sweep? He is dead—fell from a ladder and hurt his side. His case was neglected, and when he sent for me he was past remedy. I sent him to the Infirmary, where he lived only two days. He was buried on Christmas day. I sold my Koran to buy him a coffin." This poor man was one of the Infirmary patients in whom George had become interested while attending the hospital. Since then he had received help in many ways, being considered a pensioner of the house, his broken health unfitting him for active labour. No small amount of self-denial was shown in parting with his beautifully-bound and much-prized Koran to afford his poor friend decent burial. The same letter says:—"I have had an oppressive bilious attack for the last month, which has damped my energy and kept me very quiet, circumstances not being of a kind to give one the elasticity with which to meet depression. I am getting well again, and Mary is a good deal better. Mother is pretty well, and otherwise we are as we were. They talk of writing to you by this penny post, and they certainly will soon. Meanwhile we are all glad of this reduction in postage. . . . I have now made up my mind to begin lecturing next winter in Edinburgh. In the meantime I have learned that I shall not require to take out a fellowship, but only a license, which may be had for the asking. Dr. D. B. Reid will certainly go to London, and his brother come here to lecture for him, but there will still be a vacancy, which I shall strive to fill. All my friends urge me on, and I see no opportunity so promising. . . . Dr. Reid's brother will have his fine rooms, and I cannot vie with him as a teacher of *practical* chemistry, but as a lecturer I may."

"I am now (February 13th) spending most of my time in working for my lectures, not forgetting, however, mathematics and German, in both of which I make satisfactory progress. Well, we must hope that the future will belie the past, and bring us the freedom from corroding anxiety which we have never yet known. What a moral lesson I am teaching you! Meanwhile our hearts will not burn the less warmly than they would do if gold were ours to command. In proof whereof I shall give an example of my benevolence. While I was reading

away at electricity I heard the sound of a flute on the steps, and thereafter the voice of an Irishman singing. I went to the door to give him a penny, and found a poor, but happy-like blind man, who, taking the coin as his due, accosted me, 'Och, yer honor, and couldn't ye spare a bit ould hat, for mine was druv off by the wind when I was playing yesterday in the Kirkcaldy boat, and they wouldn't wait for me, nor for yer honor naither.' Pitying the poor bare-headed man, I tried to get hold of some other body's hat, and failing, gave him my own old one. My four-and-sixpenny gossamer must do night as well as day-work now, thanks to the blind Irishman."

As letters in the two following months are the only sources of information, we give several to his brother almost entire.

"*March* 12, 1840.

"Whether do you like best to get a letter on Saturday or Monday? I like the former best, and suppose you do. It seems to me to cast a pleasant shadow, when the news are good, over the week's labours, to suit well with the lay-the-oar-by feeling, which slowly increases through the last week-day, till towards evening, or you will say towards midnight, the feeling gains its maximum, and the repose of the Sunday is pleasantly anticipated by a silent comforting *read* of a home letter. If the news are bad, why then let them come on the Monday, if they please; they won't cheat us out of Sunday's peace, and pervert the day of rest into a time of brooding over the incurable.

"This letter, heralded by the preceding waste of ink and paper, is neither good nor bad in its tendency, being a letter of love, dictated by conviction of its being owing you, and likely to contain what floats uppermost in my brain between this and post time. The time I had set apart for writing you has been somewhat intruded on by the young folks wishing to see some electrical experiments in the dark; and as we had puss to give a shock to, the gas to set on fire, ourselves to illuminate, and all to astonish, time slipped away unheeded, till the clock striking made me throw down my electrical rods, and snatch up the paper.

"Of business I have nothing to tell—things are as they were. I have been foiled in another attempt to get something to do, and am writing away at electrical lectures.

"The weather here has been of the finest. Our sparrows, like yours, have put off their flannels, morning gowns, and slippers, and walk about in innocent nakedness, to enjoy the sunshine and pick up the crumbs. There is plenty of sunshine going; no rain for a month; but the supply of crumbs is rather scarce here as with you. I have found it more than once befitting my complexion to wear Raphael-like hair; it saves a sixpence. And I can now understand your delight in finding in an unknown hole in your waistcoat, an unsuspected coin. I collect pennies together, and hide them in a corner for letters; and except in the article of tobacco, I am a very economical man. As regards that latter *necessary*, indeed, as it only costs threepence halfpenny an ounce, I do not upbraid myself much for it; the less that I have found a decent woman who gives me a pipe in to the bargain. Except a visit to the Exhibition, to which I treated myself, I am innocent of expenses, which I need to be, seeing I am already in debt."

"*3d April* 1840.

"We received your welcome letter this morning, telling of your exceeding business, and freely admitting the propriety of your not writing us. I am about, as the voice or oracle of the household, to send you what comfort I can in the shape of a letter,—all the comfort, I mean, that a kind letter from a brother can give, whatever its subject be. Had I known how very busy you were, I should have thought twice before I sent you such a shameful affair as that epistle you got this morning was. But, in truth, mother did not put the idea of writing into my head till late in the day, when the available hours were mostly past, and I had to scrawl away after dinner, when half my energies were away on duty at the central citadel of the stomach, helping to digest an indigestible Scotch mess. In these circumstances, spite of fuming away at my pipe, the brain was in a minority, and the house being counted, so few idea-members were at their places, that the business had to be abandoned, especially as the

sergeant-at-arms could catch none of the members, or tell whither they had gone. In these circumstances, I contented myself with sending you the proceeds of another night's business, in the 'bill for the better regulation of time.'

"You will not, however, think that I have forgotten you. My thoughts at present move round in a narrow circle, of which you are one of the great elements. Since January I have been out nowhere, except at considerable intervals to see Miss Abernethy, so that no foreign affections have come in to invade the sanctity and integrity of home-love. I have abstained from writing, very much with the hope of seeing you very soon. For example, I read the other day expressly for your sake, a work on the use of artificial light, from which I would have copied out passages for your benefit, had not I looked to see you very soon. But we soon shall see each other 'face to face,' and this and other matters thought about for your sake will come out one by one as occasion serves.

"Do you remember a certain production of your schoolboy days, a painted procession of men of all nations, journeying towards some central goal, some mysterious and unpainted limit, which was left for the imagination to scheme out for itself, being too great to be squeezed into the narrow space of pasteboard dedicated to the marching of the wondrous host? I remember well the delight I used to feel in watching your deft (not daft) pencil designing, with a *curiosa felicitas*, the assembled hordes of all nations, and peoples, and kindreds, and tongues. No Miltonic pageant of warrior angels marching to battle, or school-read history of the 10,000 Greeks retreating from treacherous foes to their native land, or Elgin marbles, with their noble men figures, and wild, unearthly, snorting horses, nor anything else I have read or seen of mock or solemn procession, ever affected me more than that same strange pilgriming host of yours. Marry! history, grave and gay, waxes dim, when compared with that hieroglyphic chronicle. The strange men, with uncouth dresses and wild looks, who bestrode great serpents; the cars of victory, drawn by wild antelopes; the wild boars tamed down into beasts of burden; the bloody panthers chained, as of old, to Bacchus's chariot,—all these, and a thousand other forms, come back on me

as a chance occurrence has turned my thoughts to that long-forgotten panorama. Whither has that marching host wended? One may ask in answer, whither Alexander and his Greeks are gone; Xenophon and his 10,000; Xerxes, or Cæsar, or Charlemagne—whither? All gone back to nothingness and night, mouldered into dust, ay, and made up again, mayhap, and that over and over again, into men and women. So has your great army vanished, and of its existence seemingly no vestige now remains. So thought I, so I daresay did you; and yet, strange, strange to say, one solitary waif has survived the destruction of his brethren, a single pilgrim, untouched by time, but dumb as to the fate of his fellows! You will see some meaning in my raving when I tell you, that last night I found lying on my table (arrived there I know not how) one of the figures that once filled a place in the procession. There he lay, right before my amazed eyes, a Turco-Persian, by the look of him, a jagged crown upon his head, and in his clenched fist a long sabre, suiting well with the swashing look of the fellow. I cannot think how he got to my table; perhaps he fell out of the leaves of a book, where he had been imprisoned, like Ariel in the cleft pine, for some ages. I do not know, but so soon as I recognised him I caught him, and stowed him away carefully in a sly drawer of the curiously-devised desk I inherited from you. There he is, very precious as a memorial of you, and of old, old days, when we and others were young. There he shall lie near your astronomical devices, which I consider my property, and shall keep till you are married. I shall then make a present of them to your lady, as an heirloom of the family, and an evidence of the superior powers of the boys of the olden time.

"There have I cheated you out of much clean, serviceable paper, by getting involved and hurried along further than I intended, among that processional throng. Extricating myself at last, I have to tell you of home affairs. . . . I lately sent copies of my essay to Paris by a friend, with letters to three of the chief French chemists. I assure you it is far easier to write in English than in French. John Niven was out of town, and Harry Giles in London, so that I had nothing for it but to fall to myself. I made one letter serve them all as a staple docu-

ment, adding, however, to each a special piece of choice flattery, such as might suit a Frenchman's vanity. I got Miss Niven to look over my letter, and correct it. Without her correction, it would have been a very sorry piece of French."

"*April* 28.

"I am writing on the evening of a day about which you will have ceased to think in England; that is, the day misnamed Fast-day, because the slowest in the year. The dull, sepulchral clanging of the bells, and the silence of the street, made the day dull, and the exceedingly sunny brightness of the air drew me forth from my books. I wandered down to the sea-shore near Granton, and loitered along the verge of the sea, singing and picking up shells and sea-weeds, and now and then a strange stone, with which I loaded my hat and pockets. There, among strange crab-fish, and cuttle-fish, and creeping things, what should I find thrown by the waves at my feet, but a little round leather play-ball. The question arises, whence came it? It was small enough to suit the delicate fingers of the most fragile mermaid or sea-nymph, who may have tossed it in excess of glee too far, so that it came to the surface of the great water. I had been amusing myself skimming oyster-shells in duck-and-drake fashion over the surface of the water—this being a great occupation of mine at the sea-side. Mayhap this pleased the sea-ladies, and they responded by sending me the ball. Who knows? The voice of the waters spoke in full diapason tone, some stout hand being at the bellows. And doth not St Paul say, 'That every voice in nature has a significance?' Doubtless, but our closed ears understand it as little as the music of the spheres. It may have been that some too frolicsome nymph broke one of the mother-of-pearl panes of Neptune's sitting-room with the misdirected ball, whereupon the angry god, snatching the offending missile, hurled it with his mighty arm sheer through the opposing waters, to perpetuate its future assaults on brother Pluto's round earth (as Jove tossed grim Mulciber over the crystal battlement). Whether or no, it has led me, in vain attempt to trace its parabolic and altogether hyperbolic course over earth and sea, far away from my object in snatching my pen to

write gravely to my grave brother. Wait a bit, the gravity is coming.

"James has got a prize from Sir W. Hamilton for translation, but otherwise has not done much this winter. I am as before; but now done with classes. Dr. Kombst, who has highly eulogized my progress in German, especially my quickness in learning to speak (after a fashion)! has sent me a perpetual ticket to his lectures and classes, so that I may take my own time of attending. . . .

"Forbes and I have visited some class-rooms, and will look over more before fixing. . . . I have many kind friends here, and keep a good heart in me."

"*Wednesday, May* 1840.

"I shall just write you here a desperately swift letter, having too little leisure to take much pains about the perplexing little commas and stops that stand in the way of composition. I would I were beside you in your busy working, I think I could help you more (indirectly) than some better-hearted people. Whenever you come, we shall be glad to have you, and I can tell you that you will find your old friends as loving as before; and I can promise you some desirable new ones. Although you are so very busy, I am going to introduce to you by letter a gentleman leaving this for a short stay in London, Edward Forbes, the celebrated editor of the 'Maga,' a real good-hearted, clever fellow, and one I am sure you will like. He was a painter before he took to natural history, and is still a fine sketcher; he has seen your work, spoke of it in very high (but honest) terms, and wished to know you. He is about twenty-five years old, and now destined for a scientific career.

"He is a very amiable, obliging fellow; at the same time exceedingly well read in all sorts of books, and fond of literature. I need not tell you he is a wit, or a good song writer; but you may not know that spite of all the quips and cranks that gave the 'Maga' so much interest, he is a fellow of great good sense, and fine taste as to literary or artistic merit. Indeed, I do not know among my friends any one on whose judgment I would put more reliance in any disputed matter.

"I hope you will like him; I am sure you have a great deal in common, and you may find him a pleasant and useful companion. We want to give you the red ribbon, as soon as your paper is done. It was he proposed you, for great was my surprise when I heard read out among the names of the candidates, one *David* Wilson. 'May I ask,' said I, 'who this namesake of mine is?' 'Oh! that's your brother.' 'Oh! said I, 'then Daniel is the name he rejoices in,' and so you were un-Davided.

"Forbes is bringing out a book on the star-fish, for Van Voorst, in the style of the Zoological Gardens, with head and tail-pieces, which he is at present drawing here on wood. One of the tail-pieces, illustrating the class of sea-urchins, is very good. It represents a hedgehog, a sea-urchin, and two little knavish rascals, admiring each other on the sea-shore. In this way, all the kinds of urchins are most oddly brought together. I'll give Forbes a letter to you; he knows how busy you are, and will not waste your time.

"I have been seeking for a room to lecture in all over the town, but have not yet found one, and am induced to delay, as there is some prospect of a better room turning up than any yet proposed to me. One trump card has turned up among the many blanks that have been coming to my share, with a goodly set of knave cards too among them. This is Christison letting me work in his laboratory. I shall thus get something ready for the Association at Glasgow this autumn. You must get your visit over by the end of August at least, as I am engaged for September there.

"Do you remember Mrs. Goldsmith, the old English widow lady? A daughter of hers, Mrs. Lillie, a widow, and a young lady friend, visited Scotland last summer, and I was out a day with them at Roslin. The talk turning on verses, I was asked for some, and promised them; the next day I called with a copy, but the lady was gone. Guess my surprise when I received a note from London yesterday, saying that Mrs. Lillie feared Dr. Wilson had forgotten his promise, or lost her address, so I must send them off: that's the way grave studies are stopped."

Speaking of this lady, he tells his sister Mary, "I have sent her copies of the 'Snowdrop' and Music piece, and by way of

atonement, added the following rude rhymes on her own name, not knowing what subject to choose as likely to please her. Had Lillie been her maiden name, or her husband been living, I could have called her bride or daughter, which would have been more poetical; the first line is necessarily lame in consequence of her being a widow. Perhaps I chose a painful subject, as I have since thought, but I hope not."

RHYMES FOR MRS. LILLIE.

"Thou art a fair flower graffed among the lilies,
Sister or near friend of the rich amaryllis,
And the golden-crested tall daffodillies,
Spring's early flowers;
The narcissus is of kin to thee
Bending his proud stem
Crowned by a diadem:
Children love to see
Round the calyx cup, the rosy ring,
And kings in vain might bring,
As an equal offering,
Their costly crowns.
The floating lotus on the face
Of some Egyptian lake,
Trailing glories in her wake,
As the Princess of thy race
Hath of old renowned been;
The poet dreameth to have seen
Her enthronèd as the queen
Of the Lily flowers.
The lily of the valley is a modest thing,
And dares not to look up
From her tiny flowercup
When the sun is shining;
But the water-lily is a brave flower,
And feareth neither wind nor shower,
But owneth the eagle's power
To look at the sun.
More I'd sing of, were I dutiful,
To name thy sister flowers,
But this transcends my powers.
Some are grander, none more beautiful
Than the water-lily, all night bathing
Her petals, hidden in the swathing
Leaves, that keep from scathing
Its every charm.
May such a fate be thine, to find
In darkness and the hour of sorrow
A hiding-place until the morrow,
Casting the shadows far behind,

Invade the twilight grey,
And dawning on to perfect day,
Drive grief and care away
And the heart's sadness !"

"I have not heard from Daniel since I wrote to you," he tells his sister a few days later. "I got letter after letter from him the week before, concerning a chemical lectureship in one of the small London schools, which was offered by its proprietors. Daniel would have liked well to get me up beside him, and made out a fine picture of the advantages of the place. But I saw from the first that it was a shabby affair, both in respectability and pecuniary value, and all my friends here advised me to have nothing to do with it. I suspect, however, I got the credit among the London folks of being knit to Edinburgh by stronger ties than professional *esprit*. Daniel Macmillan sent me a letter to-day, in which he refers, with evident surprise, to my refusing a London lectureship, and puts the query, if the great attraction here be not a heroine? Marry! they will have me entangled in some love scrape or other to give a colour of rationality to their own fancies; and Daniel, though saying nothing, has, I daresay, had a laugh with his namesake at my sudden conviction of the great advantages of a residence in Edinburgh. Nevertheless, in spite of these sly insinuations, you know and I know, that the 'Virgin Chemia,' as certain of the old alchemists call her, is my only love and object of worship. Her ladyship may be adored in a very quiet way; a little expense for glasses is all (and does not every lady need her glasses—tumblers, spectacles, mirrors, and so forth?) Flesh-and-blood ladies need on the part of their adorers lots of wealth and wisdom, and my share of both is so very slender, that I must tarry a long while before I get the right to address them."

To the lectureship spoken of the following letter chiefly refers:—

"21*st May* 1840.

"MY DEAR DANIEL,—I know not what to say to you in return for your great trouble in looking after this vacant place for me, and if thanks were things to be sent between brothers, I should

make my letter so heavy with them, that it would need two or three of Mulready's nonsensical envelopes, stuck all over with Her Majesty's penny heads, to get it through the Post-Office. As it is, however, I fear the place is not worth my taking, even in its best view. The school must be a very small and humble one, for I never heard of its competition with University College all last winter; and no exertions on my part could make much difference on the small income it must yield its chemist. I never heard of Mr. —— ——, B.A., nor do the Cambridge men here know about him; and from what I know of the London students, I can assure you a very, very slender stock of chemical knowledge will go a great way among them. As to Mr. —— going to the College of Engineers, he can only be going as assistant, for Everett, formerly of Middlesex Hospital, is the chemist of that institution. I could have stood with the best chance of ——'s place, for I knew of it when inquiring about the Engineer's College last autumn, but I did not think it worth my while.

"The London students are notoriously the most unscientific students on the face of the earth. My English friends need not take offence at this, for the Englishmen who come here are abundantly characterized by scientific enthusiasm; but the professional business spirit of the London schools is alien to the true study of their subjects, and on such things as chemistry they only ask what will pass the halls. I had full opportunity of seeing this, last winter, in the practical class of Griffith of St. Bartholomew's Hospital. An experienced and popular teacher told me it was useless to discuss law or theory before them; they did not care for it. Although, therefore, last winter I would gladly have caught at what you have indicated, I should be loath now to land myself among strangers, in a place where my love of science would be damped down by the want of enthusiasm in my pupils, and my pecuniary income would at the best be barely sufficient to keep life in. Further, I should not like to come in opposition to Graham, as a rival teacher. I have spoken to Forbes and other wise men, and they dissuade me from it. And now, indeed, there is an opening in Edinburgh such as will not soon occur again; I have the kindest assistance

from all about me, even from those I thought coldly inclined towards me. I have the good-will of all the professors, I may say, and the promise of their votes (those who have them), when I apply to the College of Surgeons for license. All the University men are on my side, and all the influential Queen's College men. Both Dr. and Mr. Lizars have promised to help me, and recommend pupils, and I am pretty certain of getting the Cambridge men, one and all. All the red ribbons, of course, stand by me, and many private friends (ladies especially) are beating about for pupils.

"In these circumstances, I reconcile myself to the additional expense in beginning here (though I am certain Lucas underrates the London prices), because I am sure I should have just to do in a few years what I am doing now, and with no greater, but in truth with fewer advantages. London is not the place for me at present; Edinburgh is better; this has been impressed on me by Samuel Brown, Forbes, Professor Syme, Young, and others, long ago, before this matter turned up, and I should prefer remaining here to going anywhere else for some time.

"I mourn to think how your precious time has been taken up about this; and along with this, I see with sorrow how little likely it is that you and I will get together for a long while; but the same professional necessity that took you to London will keep me here, and for a while we must 'dree our weird' separately.

"I have in hand at present a very interesting inquiry regarding the phosphorescence of sea animals, and its possible connexion with electricity. It was begun at Forbes's request, and is likely to yield an excellent paper for the British Association. I work some hours a day at purely chemical labour at Christison's, and hope to get something in that way ready also; so that I shall probably read papers at two different sections.

"Regarding the Brotherhood, there is no secrecy as to its character, but the opposite, enjoined on all men. Nevertheless I never talk of it before people, for they cannot be got to understand its true character. I advise you to do the same."

"*26th May* 1840.

"The bearer of this letter is Mr. Edward Forbes, triangle-bearer, painter, song-writer, naturalist, and I know not how many other excellent and admirable things besides. He is at present in London, to superintend the printing of his book on the star-fish, and will stay some time there. As I have told you concerning his talents and amiability before, I shall leave you to discover his merits yourself, and close this introductory portion of my letter; the rest you can read at another time.

". . . . . For my part, I expect to be married about the year of our Lord 1860; all thought of the ceremony being celebrated sooner, has clean gone out of my mind for a long while back, and I have banished all love ideas. It is different, however, with you; and I hope sincerely to see you soon, as that wild, strange, powerful man, the author of the Chartist Epic, says, finding 'expectation substanced into bliss.' With every fond wish for your happiness, I conclude here, for I have got strange beasts to analyse, sent me from the sea-caves of Fife, and they are beginning to decay. Hoping you have not kept Edward Forbes waiting all this time, I remain your affectionate brother,

"GEORGE."

The allusions in the close of this letter are in consequence of Daniel's approaching marriage, and how touchingly prophetic does that to himself now appear on having reached the year he names!

"*June* 6, 1840.

"I work steadily at my lectures, writing and reading often for eight or ten hours a day. I find that the undertaking is a more serious one than it seemed at first. But I don't flinch, and hope to get on bravely."

"*July* 18.

"I shall write you at present a very short letter, for I have not much to say, and am not in the humour for saying that little same. The weather here has been of the worst,—rain, rain, such an eternal shower-bath of rain that no Murphy would have dared to foretell it had he possessed the power to foresee it. *If* he had chalked out such an umbrella July, he

would have been seized by the enraged people, and burned alive,—roasted, as all unboiled murphies should be. In consequence, I have never got out to walk, and the excess of vapours without has begotten dyspeptic, blue-devil vapours within, of which I have not yet got a clear riddance, though a clamber up Arthur Seat with Professor Blackie has expelled most, and given notice of leave to all of them."

The next letter speaks of a pedestrian excursion in prospect, in which George was to have his cousin James as companion. How this plan was carried out, and what were its effects, succeeding chapters will show.

"*September 5th.*

"I was away at the country when your letter arrived, having gone for two days to Penicuik with John Niven, and since I came back I have been making preparations for setting off to Stirling to-day, if possible. The weather, however, is at present very stormy, and unless it improve I shall not leave till to-morrow. I intend to walk about the country there for a few days, and then set off for Glasgow, when the Association meets. I shall return as soon as the Meeting is over.

"I go to the country without much desire to be there, I have so much to do; but I feel the need of some relaxation, and it will gain time in the end. I have nothing to tell about almost anything. . . . I have not yet written to Glasgow, but they know my intention of coming. I shall be there a week, and leave the moment the business is over. Meanwhile the sun has come out, and it prompts me to pack up. I'll write you either from Glasgow, or as soon as I return."

With this glimpse of sunlight we close the chapter, having before us many days like those St. Paul speaks of, in which neither sun nor stars appeared.

CHAPTER VI.

LOSS OF HEALTH---PUBLIC LECTURES ON CHEMISTRY — INVALID LIFE.

"As many as I love, I rebuke and chasten."

MERCIFULLY is the future hidden from human eyes, else would the few days of country life by which George Wilson expected to "gain time in the end" have been very differently anticipated. It may be that compassionating angels watched with wistful eyes his departure from home, but love infinitely more deep and tender than theirs was even now preparing the furnace, by means of which the process of refinement was to be carried on. Half of his life is now past; in almost unbroken health have the years fled, while his soul has been clothing itself with the beautiful garments of wisdom and knowledge. Hitherto all has been preparatory, and friends look forward with abounding hope to his opening career.

"If God grant me health and leisure, my most urgent needs, I shall not despair:" thus have we seen the desires of his heart expressed; yet these were the very things to be denied, while many other precious gifts could only, from the absence of these, be partially turned to account.

In allusion to this period of his life, Dr. Cairns says:[1]— "Ardent in temperament, buoyant with youth, and elastic in body as in mind, with gay humour, keen repartee, flashing fancy, and profuse literary as well as scientific faculty, under the presidency of a clear judgment and a strong will, he seemed

[1] 'Macmillan's Magazine,' January 1860.

formed to cut his way to the rapid eminence and brilliant success, after which he eagerly panted. A totally different path was marked out for him; and in this contrast lies the moral interest and pathos of his life."

Stirling was the head-quarters of the cousins in their pedestrian tour, a much-valued friend being their hostess there. On the 10th of September he writes home, "I should have written yesterday had I not been away up in the country, spending the night in a farm among the highland moors, about eight miles above Stirling. Hitherto things have gone on most excellently in all respects; Mrs. M.'s children being in the country, she has devoted her whole attention to making us happy, and we have received every kindness from her. A brief record of what we have been doing will best show you how we have been occupied, and prove to you that we have not misspent our time. Saturday was devoted to a nine miles' walk over the carse of Stirling to Bannockburn, to the site of the stone where Bruce's standard was placed on the day of battle. With the help of two gentlemen, I got a somewhat good idea of the forces in the affair.

"Then on Sunday, after hearing two tremendously long sermons in the Established Kirk, it was proposed to walk out to Bridge of Allan in the evening, and hear a third discourse. We walked out, but as the sermon was in a wright's shed which was crammed, James and I walked farther to learn if there was evening service in the parish church of Lecropt, a beautiful place on the Perth road. Singularly enough, there was no sermon, and we had to occupy ourselves admiring and asking questions of the myriads of bonnie bairns we saw about us. Of these there were so many that I can conscientiously say that Stirling and Perthshire beat all places hollow for beautiful children, and as sharp as beautiful. . . . . I am out every day walking till nine o'clock. I tried last night to finish this letter, but this is all the length I got. This morning I add that I was away on Monday walking to Doune, which with the return makes a distance of sixteen miles. Tuesday, as I have said, we spent at a farm seven miles off, and now we are just starting for a twenty miles' walk into Perthshire. We shall rest there

a day, and come back on Saturday. I leave this on Tuesday at the furthest, so that time presses, and as the period is less than I thought it would have been, I am anxious to make the most of it."

"STIRLING, *Saturday, September* 12, 1840.

"MY DEAR MOTHER,—I promised to write you, when I returned from our Perthshire excursion; I have just come back from our twenty miles' walk, and sit down to send you a few lines, but as I have been a good deal knocked about, and have a very bad pen, you will excuse the scrawl I send you. On Thursday, James and I set off for Balloch, a farm in Perthshire, about three miles from Muthil, where Mrs. M.'s children are staying with their aunt. It was a very wild day, the rain falling almost incessantly, but as there was no help for it, we buttoned our surtouts about us, and, staff in hand, set off, Mrs M. accompanying us four miles out of town. As we passed through the Bridge of Allan, I was surprised by some one tapping at the glass of a window, and looking round I recognised John Niven's goodly countenance. I stayed a few minutes with them, and set off again, leaving Mrs. M. a little past the Bridge of Allan. We trudged on manfully, through rain and wind, walking four miles an hour without flinching for the first thirteen miles. In this *we* were greatly assisted by a small drop of brandy which our kind hostess insisted on our taking; and *I* by the fact that James was carrying out a quantity of tobacco to Jean Scott [an old servant of the Russells]. As it was not at all unlikely that the tobacco had been smuggled, I exacted a tax on it, in the shape of a few inches off the pigtail, and getting a light at the cottages we passed on the road, I kept up my steam bravely. After reaching the thirteenth milestone we stopped at an inn at Ardoch, and as it was threatening a very heavy shower, we waited and refreshed ourselves for nearly an hour. Thereafter all went wrong. We left the turnpike road to take a short cut by an old road over the moors. We got directions how to proceed at the tollgate, and James, who professed to know the country, learned the route from the man. But, alas! his memory failed him at the critical place; and after we had proceeded

about two miles we came to a place where two roads crossed, leaving us three routes to choose among. No effort of remembrance could enable either of us to recollect the right way; and after reproaching James, we agreed to take what turned out to be by far the longest road, by at least three miles. There was no house or person near to ask at, and we had the mortification this morning to find that, had we asked at the first farm-house we came to after our dilemma, we might have got across a field into the right road, and saved our legs a weary stretch; as it was, we wandered through fields and over farms, and at last reached our destination, having been on the road from eleven till six o'clock. We were most warmly welcomed at a beautiful farm-house; got a most hearty dinner-tea, and, as the folks had not seen candles for several months, after a dose of the everlasting toddy, we got off to bed at nine o'clock. Here, however, our troubles did not end, for though they swore that the bed had once held two Stirling bailies, we found it too small for us. The whole night was spent in a battle between us and the bedclothes; the clothes determined to be down on the floor, and we as determined to have them lying on us. I am sure I awoke a dozen times, it being my office as occupant of the front of the bed to pull the sheets and blankets up, and James instinctively gave a grunt, and pulled them over to his side. I slept little, but as we lay nearly twelve hours in bed, we were quite refreshed and nimble next morning, though we did not know what *lee* to tell, when we were asked whether we had slept soundly or not. Last night was a repetition of the same manœuvre, but as we employed ourselves speculating on the way in which two famously fat bailies had lain there, the time passed away pleasantly enough. My pen wearies to be done, ashamed of its performance, else would I tell you how we went to Muthil, and visited R. T., and how we saw old Jean Scott, and I smoked a pipe with the ancient, witch-like, doited body, and how in the evening we took tea with Minister Walker. This morning we walked home again in a bright beautiful sunny day, and did not lose our way. We looked in at Mr. Abernethy at the Bridge of Allan, and as he was at dinner, he insisted on our staying, which we did."

The troubles of this excursion were increased by James Russell, with characteristic heedlessness, having left home with shoes so worn, that it was found necessary to have a pair made by a country workman. These, being strong and heavy, so blistered his feet that he was thankful to take them off, and limp along shoeless in the quiet roads. The result of the unwonted exertion to George was a sprain, which might have yielded readily to simple appliances; but a dislike to give trouble, combined with a child-like forgetfulness of pain not immediately pressing, led to concealment from his kind hostess that he had suffered aught. It was a cloud no bigger than a man's hand, yet it was to darken all his life. Passing over the same ground fifteen years later, he spoke almost shudderingly to a sister of this walk and all it recalled to mind.

Three days later than the letter just given, he went to Glasgow, to attend the meeting of the British Association. A week of exertion and excitement, almost inseparable from such assemblies, caused further injury to health, and he returned home seriously ill. His friend, Dr. Skae, was his medical attendant; and now began that deep debt of obligation which his friends of the medical profession laid him under throughout the rest of his life. Their aid was in most cases given unasked, prompted by a loving regard, and with the tenderness of brothers did more than one watch the ebb and flow of his strength, prolonging by affectionate care the years of his earthly sojourn.

A letter to Daniel, of October 2d, speaks of his health:—"I shall not apologize for taking a small sheet in answer to your kind, candid letter of this morning, for I am still an invalid. I have been confined to bed all day for the last week, and have to look forward to an imprisonment to the house, at least for the next fortnight. Leeching and poulticing were of no avail, and the end was an abscess, which was opened two days ago, leaving a gash more than an inch long to heal up before I am sound on my pins again. If I could have looked to the thing in the country, I might have prevented all this, but that was impossible; and my hurried departure, the very day the Association was over, I feared might be thought a sign of extravagant anxiety to be home again. . . . And now I must finish this

scrawl, and get back to bed, and try to get better in time for your coming."

It was while laid aside by this illness that his first course of lectures was arranged, under many disadvantages. He had received license as a lecturer on chemistry from the Royal College of Surgeons,—a privilege at first confined to the Fellows of the Royal Colleges of Surgeons and Physicians, but afterwards granted by them to others qualified to teach natural philosophy and chemistry. George Wilson was their first lecturer on chemistry, and his tickets qualified for their diplomas, though not for that of the University. For the field of teaching thus opened to him he was ever deeply grateful, as, nameless and with little influence, no other opening could have offered similar advantages. The title given to the teachers of medicine not professors is, "Extra-Academical Medical School," and of this body he now formed one. After a time, the students of those extra-mural classes were permitted to share the rights of the University students in competing for degrees. The several schools ha nited under the name of "Queen's College," and with that in Brown Square he became associated, sharing the lecture-room with other teachers, and having a small laboratory fitted up. After this Association was dissolved two years later, he retained sole possession of the house they occupied, and did not leave it till twelve years afterwards. It was within a few minutes' walk of the University, and thus easy of access to students attending other classes.

Scarcely convalescent, he entered on the laborious duties of an opening session with the ardour characteristic of all his actions. To spare himself, when professional duty was concerned, was for him an impossibility. A letter to his brother, after the first month was over, gives a glimpse at his labours and prospects:—

"*December 6th, Sunday.*

"Nothing but the most overwhelming occupation of my time, to an extent I never knew before, has kept me so long from writing to you. For the last fortnight I have not had a moment to give to anything but my lectures. I have lectured *six* days

every week, besides teaching a practical class and instructing private pupils. This excess of labour has compelled me to sit up every night till two o'clock, and rise at seven; and so tired am I when I come home at four o'clock, that I often fall asleep on the sofa while dinner is being served.

"The worst is over now, and I shall have more leisure for some time to come; but till my class had been fairly begun, I had not one moment of repose. I have now some thirty-one pupils, a most unexpected and cheering number, and I am, of course, most anxious to keep up the good opinion they entertain of me. Many of them are older and wiser than myself. I have no fewer than four Cambridge men fresh from their college, besides prize mathematicians from our own University, and other shrewd fellows who have sharp eyes to blunders, and could quickly detect them in my present subject of Heat, which they have all studied more or less before. I have, however, given supplementary Saturday lectures, that I might bring before them new doctrines never taught here, at least in chemistry classes.

"In my week-day ordinary discourses, for the sake of my youngest pupils, I have made everything as simple as possible. One of my pupils, however, came up one day to inform me I was making things *too simple (!);* as it were, wasting my students' time, 'gilding refined gold.' I said to him at the time, that if he would wait till the examinations began, he would see whether or not I had simplified too much, determined to give him if he came, a knock-down question. However, last week we were on a subject difficult enough in its simplest form; and the crest-fallen genius announced to me mournfully that he could not follow one word of what I had been saying. I laughed, and told him never to mind. *He* is settled.

"I shall only add further about myself, that I have just got out of bed, having been sleeping there after the excessive labour of last week. It was knocking me up, and my wound, after healing, opened afresh and began to inflame: to prevent the serious results that might follow I rested yesterday and all to-day. And I shall have much more leisure in the week to come."

He at once became a favourite lecturer. It was a delight to him to impart to others the knowledge he possessed, and by the wondrous law of sympathy, this delight communicated itself to his audience. And even while with patient care unfolding the deeper laws of his favourite science, flashes of wit and fancy lighted up the subject, and made the dullest feel enamoured of it. Some of those early lectures are still vividly remembered, notwithstanding the lapse of time. A sweet clear voice added to the charm; and foreign students, with an imperfect knowledge of English, were often advised to attend him in preference to other teachers, as being more easily followed. As the judgment of contemporaries is more to be relied on than that supplied from memory, and perhaps tinged by influences of later years, we shall give Edward Forbes's opinion in 1844, as communicated in a letter to his friend Dr. Percy:—"Wilson is one of the best lecturers I ever heard, reminding me more of the French school than our humdrum English, and is a man of high literary taste, and great general knowledge. Of his chemical views I know that Graham here [London] speaks in the highest terms, which he does not bestow on any other Edinburgh man." Had his health and strength enabled him, he would have long been a most successful teacher; but general feeble health, a friend has truly said, "made his life of public teaching one long and sad trial. How nobly, how sweetly, how cheerily he bore all those long baffling years; how his bright, active, ardent, unsparing soul lorded it over his frail but willing body, making it do more than seemed possible, and as it were by sheer force of will ordering it to live longer than was in it to do, those who lived with him and witnessed this triumph of spirit over matter, will not soon forget. It was a lesson to every one of what true goodness of nature, elevated and cheered by the highest and happiest of all motives, can make a man endure, achieve, and enjoy."[1]

Of the relaxation obtained in some degree by the return of summer, we have specimens in one or two letters, forming pleasant episodes in his outer life. One to his cousin James, now a divinity student in Glasgow under the Rev. Dr. Wardlaw, refers

[1] 'Horæ Subsecivæ,' Second Series, p. 105.

to the opening of the Edinburgh and Glasgow Railway, and the excitement it caused in the minds of many from a fear of Sunday trains. It will be remembered how petitions were circulated by which the subscribers bound themselves never to travel by this line, and how conscientious people continued to take instead the canal boat—the *fly*-boat as it was called—which was seven hours on the way:—

"*5th February* 1841.

"I suppose the Glasgow people are as much distracted about the Sunday travelling question as we are here, where beggars, petition in hand, wander from door to door, craving your signature to a promise which no conscientious man can hope to fulfil. The following anecdote, which I had at secondhand, will convey to you an opinion entertained on this serious subject by no inconsiderable portion of Her Majesty's subjects. The Rev. T. Guthrie was lately entertained by his Sunday-school teachers to a soirée, at which the reverend gentleman unbended himself most graciously, and, among other sayings, uttered the following:—On a recent Sunday some juvenile desecrators fell to making a *slide* before the minister's door. At sight of which, anxious to save both the Sunday and his legs from being broken, he despatched the servant with a dish of salt, and followed himself, as the most formidable inmate, to scare away the sliders. To his harangue on the wickedness of their conduct, the little boys, to his great wonder and amusement, gravely and sorrowfully replied, 'Eh man! it would be far better to gie us the saut for our parridge, than gang and spile our gude slide wi't.' *There* was eloquence from the 'great fire bosom' of nature herself!

"I have another thing to tell you, which I read with very great pleasure some time ago, and have always resolved but forgotten to communicate. You remember, in relation to Mr. Moffat and his Bechuanas, we both believed, I from a mere 'theopathetic' instinct, you from a clearly-perceived and analysed necessity of thinking, that no people or tribe could be found altogether destitute of the idea of a God. Well! it has been again and again declared that the New Hollanders have no

idea of a God, and the phrenologists were able to show that their brains had no cranny or crevice in which such a thought could by possibility lurk. Very good! and yet a recent traveller who has visited the tribes in the interior—where little communication with Europeans has left them in their unsophisticated state—finds that these poor brainless people have minds subtle enough to conceive the idea of a future state, and do actually believe in a metempsychosis of souls. It appears that the first white strangers were supposed to be transmigrated beings of their own tribe, come back in a new incarnation.

"A most affecting proof of the depth and reality of the belief is afforded by the traveller, whose name I have forgotten. Wandering one day into the village of a secluded tribe, an old woman walked up and looked at him with evident signs of agitation and pleasure. After gazing a while anxiously, she said, 'Yes, it is he,' and clasped the stranger in her arms. He learned, by and by, that she looked on him as the fleshly ghost or avatar of a lost son, and he was introduced to sisters, uncles, and others, as their long lost relation, returned to dwell with them."

To His Sister-in-Law.

"*May* 28, 1841.

"My dear Maggie,—I have not been delighted with anything this long, long time so much as with your kind, sisterly letter. I let my class wait till I had read it; and over and over again, on the day of its reception, I hauled it out of its cover and took another spell at it. As to its various topics I shall do my best to profit by them, though I cannot say that I understand the interest of the Exeter Hall meetings. Society meetings, whether to convert Jews or to supply chimney-sweeps with weekly rations of soap and soda, have long been to me utter abominations. Yet, after all, it may be that the yearly May explosion of all the froth-bubbles that have been simmering and fermenting themselves into existence, during the preceding twelve months, keeps 'the brains of men clear for the rest of the year.' I don't like the trumpet-sounding spirit of

this noisy generation; it is one of the virtues of our *Ribbon Order* that we eschew all but the most necessary talk. However, Maggie, I doubt not the listeners, who, like your own good self, with the best of motives, attend such places. Yesterday, the red-hot General Assembly of your kirk deposed the seven poor rogues who have been hanged, or suspended so long; and young ladies sat from nine in the morning till three o'clock *this* morning, without shifting their places the whole while. I was advised to go, but, as it costs a shilling to get in, I reflected on the price, and resolved, in preference, to dedicate the shilling to hearing a splendid military band perform in our Zoological Garden. That will be greatly more pleasing to my ears than polemics of any sort are.

"If you had been at a lecture of Faraday's—ahem! I could have excused you, or listening to what Exeter Hall was built for—an Oratorio,—it would have been well. But the yearly meetings! O Maggie, Maggie! you see what a grave, censorious rogue I am grown.

"From the preceding part of this letter you will rightly gather that any little amiability you once thought I had, has fairly evaporated. I am afraid it has, and how can it be otherwise with a poor bachelor who spends the whole day in making and discoursing on sulphureous, phosphoreous, and other notorious, sour, acidifying substances? The heart of me is clean dried up, and serves no other purpose than to propel blood for digestive purposes. The whole tone of this epistle, I am persuaded, will show you (what I have not courage to confess honestly) the melancholy, stunted state of my moral being, and will enable you to understand how welcome was that proposal of yours concerning the procuring a wife for me. Nevertheless there are difficulties in the way, lions in the path, and the thing must be thought over. . . . Meanwhile, this much I will say, that provided you can clear away these difficulties, I see no person half so well fitted as yourself to pick out a wife for me. And why should it not be Miss ——? I have nobody picked out for myself here or elsewhere. So that for that matter you are perfectly free to speculate on my account, in any quarter you please. You may make any use of my name you think fit;

make proposals wherever and whenever you see they will be acceptable. I leave the matter entirely in your hands, with implicit faith in your good intentions, prudence, and discernment. If an acrostic or a sonnet would help the affair on, it need not be wanted; or a bottle of marking-ink, or bleaching powder might, in this practical age, do more powerful execution. I begin to see no refuge for myself but in a wife. I am at present in love with so many ladies that I can never, by any act of free-will, single out one, and even if I could it would be at the risk of offending a score. But if you were quietly to get me engaged in London, some quiet morning I would be found missing, and reaching London in a noiseless way, could get married, and return. If any lady accused me of 'trifling with her affections' when I returned with my bride, why, look you, I should assure her she was the lady I wished to marry, but circumstances, which I was under oath not to repeat, had brought about my sad catastrophe.

"O Maggie, Maggie! see how I rave away at all the old nonsense, as if I were still eighteen. Will marriage, with all its sweets, be half so free and pleasant as dear, delightful bachelorhood, and no claims, duties, or worldly requirements? Can I love any woman better, if she made coffee for me every morning, darned my stockings, and knitted me night-caps, than at present I adore more than one wingless angel who does nothing for me, but play and sing to me as long as I desire.

"I am beginning to discern the goodliness and desirableness of marriage, but still I fear afar off. I confess there seems no other hope for a man than finally getting married. Sometimes, through cloud-curtains of smoke, I see visions of myself and a decent little body of a wife, now boxing my ears, now kissing me, I in the meanwhile submitting patiently to both inflictions. Again, a stately lady, member of the Six Feet Club, passes in awful vision before me, her reticule hanging on one arm and I on the other, looking exceedingly meek. Oh, dear Maggie! think of that latter dreadful consummation. I awake up from such thoughts in a cold trembling, and determine for the nonce to wash myself free of all womankind, except relations and servants (the latter to be chosen of small dimensions and as ill-

favoured as possible). But I have ceased to make vows of renunciation of the love of ladies. I find they are followed by the same consequences as vows to abandon smoking. It would be shabby to give up smoking when your tobacco is done, as if poverty or avarice were the motives. So I get some of the dearest, such as shall be worth giving up; but, alas! it takes so long to smoke a farewell that the weed gets done, and the old objection is as strong as ever.

"So with the dear damsels, I clothe myself with my vow as with a brow of brass, and away to show the flintiness of my heart. But, alas! what can the old Adam do against the young Eves? (By-the-by, how curiously that word rhymes with thieves.) An ignominious defeat is the end of both attempts.

"Last night I spent in the company of my very dearly beloved and bonnie ——, a young lady of some twelve years' acquaintance with the world, who, had I my will, should never grow a day older or an inch higher. The dear lassie sings like an angel, and is as graceful as a young fawn and as artless as the first Eve was. Why must she outgrow her present perfection, and become a grave woman? I see not, though I feel the necessity. Good night, Maggie. I have set my brain on fire thinking of the lassies."

During the winter he had suffered a good deal from rheumatism; and in the hope of regaining strength, he paid a visit in autumn to his brother in London. Travelling by Glasgow and Liverpool, he, as usual, met with much courtesy from unexpected quarters. Alexander Russell, the youngest of the cousins already frequently mentioned, resided at that time in Liverpool. In his first letter from London, George says, "I was very kindly treated at Liverpool. When I arrived I found that Alick had not got my letter. Accordingly, I went with a cab straight on to his lodgings, and found there his landlady, a very kindly and superior person, young and ladylike, who, finding I had come off a journey and was alone, made me tea, brought out her own pleasant home-made brown bread, and sat and chatted with me. All this and other kindnesses, I am sure, will never be charged to Alick's account; for the secret came out after-

wards in her own statement, that I was very like a brother of hers, a young priest of the Jesuits, and that she knew what it was for a stranger to be away from home, travelworn and weary. Alick was very pressing that I should stay longer with him. It will amuse you to hear that K. is the old fellow about dress,—showed a waistcoat which, so far as I could make out the calculation, cost less than nothing to the purchaser, and was, as it were, when washings were included, a clear source of gain.

"I have stood my journey well; my general health and rheumatism are improving, and I hope to continue making progress." This hope was unfortunately not to be fulfilled, for almost immediately on reaching London he suffered from severe inflammation of one eye. The first doctor who visited him advised simple remedies, and thus time was lost, and the eyesight only saved by the use of the strongest measures. A medical friend who happened to call was the first to perceive the danger, and, being a skilful oculist, averted the evil by most anxious care; so that in eleven days he was able to write home, and to say, "My eye is now better, my general health much the same, and my rheumatism no worse. Two doctors I have met here, reckoned skilful, give promise of rapidly recovering strength, there being nothing radically wrong with me; at present, however, progress is slow." Expressions of anxiety in home letters lead to assurances a few days later: "So far as my eye is concerned, believe I am honest when I say it is quite better, at least only retains a little weakness, which obliges me to avoid glaring lights or exposure to currents of air. You will, therefore, understand that I am now quite out of doctors' hands, and absolved from medicine, recommended to good diet and care, but otherwise just as I was when I left you. As to coming home, I shall not do so immediately; it would not be safe, indeed, to travel at present, from the risk of a return of my late inflammation. London has not had a fair trial; but, at all events, I shall not remain here long. The weather is extremely fine, and I walk out in the afternoon when the sun is down, and think I shall make progress now day by day. Being forbidden to walk much on pavements, owing to the reflection

from the hot stones, you must not look for city news, or think I am ill because I have not visited friends there."

Before leaving London, however, he can say, "The sun shines on me with a brightness, and the wind blows on me with a balminess, which they seem to have lost through this gloomy summer. The weather here has been of the finest; clear, unbroken sunshine, for the last fortnight. But yesterday a thunderstorm brought deluges of rain, and to-day we have one evendown pour, with the temperature much lowered. I hold it one of the surest symptoms of improvement, that I have lost that sensitiveness to changes in weather, which made me shiver in July, and cower by my laboratory fire. You must not expect to find me fattened up, or very much stronger than when I left, but more active and more healthy I certainly am."

Shortly after this visit, his first little niece appeared in the home he had just left; and he informs Daniel—"I could give you and Maggie many advices about the bringing up of the young lady—ahem! But I am afraid neither of you would appreciate the fruit of many meditations. One little hint, however, I throw out, as a small endeavour to assist you in your new and strange duty—this, namely, that when baby begins to speak, which she is likely to do very soon, both in respect of her sex and her relationship, you ought not to try her with such words as papa and mamma,—these are poor sounding vocables, the half of them vowels which she could already articulate if she saw any occasion for it. No, no; give her some hard word full of consonants for a gumstick, to help her teeth through. I don't know a better than uncle, the three consonants come so nicely together, with a vowel satellite on either side." Alas! the little lips never achieved this triumph; a year later found her in the heavenly fold.

It was now within three weeks of the winter session of 1841-42, which promised to begin in greater physical strength than the preceding one. How this hope was again snatched away he tells Daniel:—

"*November* 6, 1841.

"MY DEAR BROTHER,— You will be glad, I am sure, to receive

a letter in my handwriting; the best evidence I can send you that I am better. I had a very severe attack of illness, much worse than in London, and the treatment was proportionally rigorous. What was most annoying in the whole matter was, that a week before I took to bed, I showed my eye to Dr R., the oculist, and requested his advice; by some strange mistake he thought I complained of my eyelid, and said there was nothing the matter. In this way precious time was sacrificed, and my eye nearly lost. I never in truth spent such a fortnight of misery. I was twice cupped, blistered five times behind the ear, horribly sickened with colchicum, and severely saturated with mercury. I got worse and worse, till within three days of lecture-time, when things fortunately took a turn for the better, and my eye rapidly recovered. My first two lectures I dictated in bed or on the sofa to Mary; and my third was made up out of an old production. I have been left by the medical treatment very weak, but in the meanwhile my rheumatism is gone, and my appetite and spirits are good. Things here, however, are looking very ill; the classes are very thin; my own is like to be exceedingly small. We all looked for a diminution in numbers this winter; but the amount of decrease makes us feel rather awkward. I hope, however, to weather the winter, and have at least the consolation of feeling that I shall have leisure to recruit my health, and some time for original research.

"I am obliged to take a coach up and down, which will prove rather an expensive thing as we now are. I am so rapidly recruiting, however, that I shall soon be able to dispense with it, and take to walking again—a mode of conveyance I for *many* reasons prefer.

"Along with this you will receive a note from Mary, saying I would not write you, which will show what dependence is to be placed on that lady's veracity. Indeed in writing my lectures she made many (I am sure) wilful mistakes, and tried to put me out by placing the *stops* at wrong places. I shall place the stop at the right place, and end here."

A month later he says:—

"SATURDAY, *December 5*, 1841.

"MY DEAR DANIEL,—My own affairs look a little brighter; a few more pupils drop in, and with a desperate effort the year may be got over. At present it is unpaid, thankless drudgery, which makes me at times seriously contemplate the necessity of packing off to some other corner of the globe.

"A ray of *golden* light stole into my dark den the other day, which may prove a present help, and earnest of something better in store. As I was discoursing to my practical students on some edifying subject, there walked into my laboratory a grave, business-looking, middle-aged man, who, seeing me engaged, made a courteous bow, and took a seat in an easy way at the fireside. My back was to him, so that it was only when I whisked round to chalk upon the board that I could catch a glimpse of him; and, from the quiet, determined look of the man, I set him down as agent for the gas company, or else the water-bailiff, or some other of the account-presenting gentry whom I abominate. I bundled the class away as fast as possible, and proclaimed myself at his service. Very good! The rogue was a lawyer, his client was landlord of certain houses in Leith, near which a soap manufactory is carried on, and the soap-refuse being laid before the house-windows, annoyed the in-dwellers by its noisome smell. Would I analyse the said stuff, and substantiate by chemic proof that it might, could, would, and should have an odour? Certainly; but at the same time I was given to understand that some of the chemists in town employed by the soap-maker had sworn that the stuff had no smell. Christison, however, was retained on the same side as I, and so that went for little. I told the lawyer to send the stuff, and I would soon tell him whether my art and my conscience would allow me to say it was odoriferous. The stuff arrived; I gazed on it doubting, for I had a 'cold in my head,' and my sense of smell was as good as gone. Moreover, I never cared much about bad odours, as I daresay you remember:—

> "For you must know that to chemists' noses,
> Little accustomed to smelling of posies,
> Assa-fœtida is quite the same
> As the finest oil of roses.

"I sent out for some ells of pocket-handkerchief, and blew and blew till I nearly blew both nose and brains away, then with great circumspection I inserted my neb into the paper bag with the stuff. Praised be the gods, a noisome odour was discernible; by and by, *according to Scott* [an assistant], it tainted the whole place. Such plenitude of perception was not vouchsafed to me, but I was grateful for what I got. I distilled from the stuff a liquid having a formidable odour, which I gave the lawyer to sniff. 'That's it, sir,' said he, 'put the bottle in your pocket, and bring it to court;' lawyers know nothing of chemistry, but they know a bad smell when they *feel* it.

"I hope, like Vespasian, to coin some money out of the noisome odour."

In January, James Russell is informed, "All your friends that I see are well and thriving; Cairns grows taller every day, and will require to be stopped by Act of Parliament. My life is the most dull and monotonous possible, and bears no fruit by way of thought or work. I work a little in the laboratory; analyse delightful (?) things and make some little discoveries. But I am easily knocked up, and after standing on my feet from nine till four, am fit for very little when the evening comes."

To his brother, who had been indisposed, the following letter is addressed:—

"*February* 4, 1842.

"I have just read your letter to mother received this morning, and mourned over the sad news. I have suffered myself this winter much from cold and cough, and others have done so, to a much greater extent than is common even in winter. The great variableness of the weather has occasioned such illnesses to a much greater extent than ordinary; and you must take hope from this, and believe you have not fared worse than your neighbours. Rheumatic headache is a sore thing, as I know, having had a taste of it lately; at present, however, my rheumatics are quite aristocratic, setting up it would seem for gout, and have, besides various outposts for desultory skirmishing about shoulder joints and elbows, established a strong position

in my ankles, where they manœuvred last night to an extent that put sleep for a long while out of the question. My ankles, therefore, to your head, tie us neck and heel together, and we would sympathize famously; as that cannot be very conveniently done at present, you must take the heart's sympathy in lieu thereof.

"I have at last seen in the 'Athenæum' your work announced, and shall look out for it. I hope things mend a little, and the clouds break up; still I fear you are like myself trading on the future. I have begun new classes; have got six pupils, one of whom, poor soul, begged a ticket, a deserving widow's son; it did me good in my present dreariness to be able to give him one. Of the remaining five one has paid me, the others have requested to be excused doing so for some time to come, which is a very pleasant thing for a poor debtor. I do believe I have got two of them solely because they were convinced that I was more likely to give credit than the other men. However, they are gentlemen, and will pay. The present dulness of my life was most delightfully interrupted last night in a rather odd way. I have a friend and pupil, a Mr. Da Costa, a Portuguese from Madeira, who has often begged me to accompany him to evening concerts. This I always declined, having been positively forbidden to go out at night. Some days ago he came to tell me of a famous concert, and very earnestly begged me to go with him. This I declined again, on the old plea, adding, that I was too poor, moreover, and could not afford the sum. 'Oh then,' said he, 'I'll go for you.' 'Very well,' quoth I, and so the matter was left. I could not understand why he always kept talking about the concert, till last night it came out. At seven o'clock Signor Da Costa makes his appearance, dressed, and acquaints me that if *we* wanted good seats we must set off immediately. A great deal of confusion and enlightenment succeeded; in the course of which I said, 'My dear Signor, I told you I could not go.' 'But you said,' replied he, '"very well," when I said I should go for you.' The murder was out; the Signor intended to say I will *come* or *call* for you; his phrase I interpreted as meaning I will go *instead of* you. After the kind, good soul had done so much, it behoved

me to make an effort. In spite of medical prohibition and well-grounded fears, I ventured (well cloaked and muffled) to accompany him. And as my health appears to-day none the worse, I feel very glad I did go. Delicious music of the best sort, rich full melodies played and sung by no common performers, poured through the ears into the parched soul of a man, hungering and yearning for sweet sounds and ennobling emotions; all this was something, and refreshed me greatly. At first I was ill at ease; the penalty I had paid for my former night visit was too recent and too severe to be easily forgotten. But the first overture dissolved all fears; I began to calculate how many days in bed the overture *would stand*, and soon all painful sensation vanished, the middle neutral point was reached and passed, and I yielded myself up to the full influence of the glorious art.

"Da Costa and I laughed like children at the feats of a man with fingers made of putty or dough, who did what he called playing on the piano. Such a sumph presiding over a piano out of tune, and listening with stolid satisfaction to the dull discords he made to drone out of the instrument, was like the fool in Shakspere's plays, he relieved the strained faculties, and whetted the senses and faculties for the good stuff that was coming. And good stuff it was; had I arranged the pieces I could not have selected things more entirely suited to my taste than the performances were. Old half-known melodies, bits of which I could whistle, came out, startling me with the unexpected pleasure, and the ultimate effect was such, that instead of walking rapidly and quietly home, when all was over, I, who have not whistled or sung for months, fell to trying with Da Costa who remembered best what we had heard. There we were like two fools, stopping at every second lamppost to hum or whistle, or try to recall something we had heard; he has a much finer ear than I, but I did wonders! I need not say that the main object of my writing this, is the selfish one of having the pleasure a second time. But you mingled in my feelings.

"I have been thinking a great deal about my godfathership, and after reading carefully what the Prayer-Book says, have come to the conclusion that its spiritual duties I cannot dis-

charge. These you must take on yourself. I cannot get clear light for myself, and how can I help another to find it? But my dear little Ann will be much in my thoughts, and most fervently shall I strive to work out good for her. At present I often think, as I did last night, that I could at least sing to her, and sing I shall, please God, to the little lady, some time soon, till her hazel eyes are like to be gazed away in wonder and delight."

To James Russell, Esq.

"*February* 20, 1842.

"My dear James,—I do not think you will accuse me of Sabbath desecration because I spend a portion of this Sunday evening in writing you. Your letter to Mary, and a statement from Mr. Cairns, lead me to lose no delay in assuring you that the evils of our present sickness have been exaggerated to you, especially in so far as I am concerned. I have, indeed, for the last fortnight, been lamed by my rheumatism settling in my ankles and knees, and making locomotion irksome and even painful; but, on the whole, my general health is decidedly better, and my energy and cheerfulness greatly superior to what they were at Christmas. The old gentleman had seen me limping, which in part resulted from my having leeched and bandaged my ankle that morning; but he also saw me eat a hearty dinner, and might have mentioned that good symptom, which he did not, I fear. Although I walk with difficulty, and lose some sleep at night with pain, I can talk three hours, and stand on my feet all day. I do not indeed complain, and have no claim on your sympathy to the extent to which you have given it, but I am none the less grateful for it, I assure you. . . .

"At present Mary is living very low [she had burst a blood-vessel], confined to bed, and suffering (but not much) from pain in the chest; she has no cough; altogether, she is as well as could be expected, and all immediate danger is past. I think she will recover well, but slowly; but the greatest caution is necessary in all exertion. You can believe it has caused us all

much anxiety and alarm, which are now, however, somewhat abated. From the doctor I have not learned anything precise concerning the nature and extent of the heart-affection.

"Mary is as contented, calm, and even cheerful a sufferer as could be seen; it is the pain it gives others, not her own sense of suffering, that afflicts her. Poor thing, she has been sorely tried by illness and sorrow all her days. Pray to God to restore and watch over her, for I fear anything like complete restoration to health is hopeless for her. Nevertheless, be not overmuch cast down; I believe this attack, which is a symptom, not a disease, may prove beneficial to her; and, at all events, it is to me a great relief and consolation to know that she is under the medical care of a very kind and skilful person."

"SABBATH MORNING, *March* 20, 1842.

"I am constrained by necessity to devote a portion of to-day to writing you. I have engaged to deliver several lectures to Dr. Robertson's surgical class. I have been occupied all this week with preparation, and shall not be free to write a letter till Friday next, so that this deed must be forgiven.

"I am greatly pleased to read in your letter of the delight you feel in your studies; it is a sure proof you are in good health, whether your peptic mill be going right or no. It is a delicious feeling that sober exultation which successful, pleasurable study brings; the 'exulting and abounding' emotion with which some long and rugged hill of difficulty being at last clomb, and every let or hindrance overcome, behold a Pisgah point from which a Canaan of promise can be seen. Such a feeling have I known;—'Tis gone! 'tis gone!' as old Capulet says of his cornless feet and young dancing days; but it will come back with the swallow and the summer flowers, and they will be here one of these days. At present I creep along on a pair of crutches, literally and metaphorically a lame, blind man. Nevertheless, you will be glad to hear I am mending, general health much improved, lame legs at least no lamer, much profitable and promising work chalked out for immediate and future performance; on the whole, quiet contentment, sometimes cheerfulness overflowing in its old channels, and gladden-

ing the hearts of the much enduring, dear sharers of our little fireside circle.

"We shall compare plans, and cheer on each other in our widely differing pursuits when we meet face to face, which I hope will be soon after that most appropriate and beloved of the days of the year, the 1st of April. . . .

"This is a pretty story about ——; young man, go on as you are doing, and you'll have much to answer for. I remember once being told by a stage-struck *haverel*, of a certain young actor, yet innocent of public performance, who, even in plain clothes, and in a room, could make the looker-on weep with emotion. What, then, might be expected when he trod the stage in *shammy* (not shabby) leather boots, with tin helmet, or tinsel crown and corked mustachios? Surely nothing less than that the pit would require Mackintoshes and umbrellas to ward off the briny torrents from the boxes and galleries. Take warning; if you, in plain clothes, and in a quiet domestic parlour, have made such an auger hole through a young lady's chief organ of circulation, what will occur when your reverence is mounted in the pulpit? The high, white forehead, the long brown hair, the dark eye, with its Edward Irving glance towards the sky (or, in default of that, at the ventilator), the silk gown, the white bands, the cambric handkerchief! All this may only make the little hearts go pit-a-pat, but when the 'Chrysostom' is opened, and the floods pour forth, the thunder rolls of eloquence, the platoon volleys of rarely-imagined illustrations, the knock-down, smiting blows (prompted by the 'absolute' and 'righteous indignation'), the imagination reels drunken, and cannot attempt to calculate the number of coroner's inquests which next week's paper will reveal.

"Seriously speaking, I acquit you of blame, of all blame; these sentimental, pseudo-æsthetical young ladies are the most foolish and unprofitable of nature's productions. They are always in mischief, and hauling other people into it; a restless, anomalous, and most troublesome species of bipeds."

"*March* 20, 1842.

"MY DEAR DANIEL,—I received your kind and welcome letter

at the laboratory, and was much comforted, and grieved too, therewith.

"It seems at present dreary enough to look about and contemplate the state of business, and you, I fear, are still engaged in a desperate struggle with the world. Now, I need not offer you sympathy, you have heartsful of that already; indeed, that same sympathy is a wonderfully useless sort of thing, and, like Falstaff's honour, pays no debts, purchases no commodities.

"We shall therefore waive the subject, and talk of other matters. You are glad to think my old spirits are returning, and health and ability with them, and wish to know my plans and projects. Now I am so famous at castle-building, and have so often been totally disappointed in the realization of them, that I seldom talk now of what I am about to do; moreover, everything so completely depends on my health improving, that, quite unable to foresee the issue of that, I am the more inclined to 'sit still and keep silence.' I propose, however, in summer, to give a special course, addressed chiefly to the senior students and medical men, on animal chemistry, a subject of great importance, at which I have been diligently labouring all the winter. I shall bring before them a new and highly important branch of chemistry, never properly studied in this country. The medical men themselves are very anxious about it, and it was the solicitation of others that first urged me to it. My own tastes lead me to other departments, but poverty precludes their prosecution at present, and this is really as rich and noble a field as any, and grows every day more interesting to me. I have been analysing all winter, and have not a few original observations collected together. I am sure I shall be able to give a very interesting course, and I shall only lecture three days a week, so as not to overtask myself. Many of the most intelligent medical men have expressed their delight at the proposal, and have promised to attend. If possible, one of the Δ brethren will lecture with me on alternate days on physiology; our courses being illustrative and complementary of each other. This is John Goodsir, a very noble fellow, a most excellent and original inquirer, and one of the most amiable and lovable of men. We are working together at various

topics of a chemico-physiological character. I shall send you the first-fruits of our labour as soon as it is published, which will be on the auspicious 1st of April. John Goodsir will be hampered by circumstances which may prevent him lecturing; I shall whether he does or no.[1] I do not expect pecuniary return from these lectures; I shall have to give away a number of tickets, and only the senior students will attend. But I have no doubt I shall clear all expenses, and I shall raise up a host of friends who will tell upon my winter course, besides making myself better known. If my health only improves, with God's blessing, I shall do bravely.

"In the meanwhile I have engaged to deliver, next week, three lectures to one of the surgery classes, on the composition and mode of analysing calculi. The preparation for this has prevented me writing you sooner. These lectures are intended as prefatory and introductory to the summer course, and are delivered at Dr. Robertson's suggestion and request.

"As to myself and my state of health, I am much better, and hope soon to bid farewell to my present aches. That I have often written you in another than the old merry mood will not surprise you; you know with all my faults I am not a hypocrite, and never conceal, or seek to conceal, the mood I am in. But if I have been grave, I have never been melancholy; I have neither desponded nor repined, but have struggled throughout to bear patiently every pang. I bow myself with the most sincere resignation to God's will, and pray that I may in all respects be strengthened and bettered through affliction. And yet overflowing mirth which could disport itself in letters, I could rarely boast of. For the last five weeks I have not had a night's unbroken sleep through pain, and even the repose, such as it was, has been procured only by the nightly use of morphia. Even so late as a week ago, I had to stop in the middle of a lecture overcome with a severe paroxysm, and go straight home. And what has stood even more in the way of writing, has been the weakness of my eyes, which are easily irritated, and scarcely stand even shaded gaslight, so that I have written generally very hastily, not revelled in my thoughts as I used to

[1] Mr. Goodsir was unable to carry out this arrangement.

do. Nevertheless, if you were to stumble in some night at tea time on us here, you might find me at my old tricks, retailing some jest picked up through the day or ——; but I need say no more, you would find me the old fellow, with the old nonsense in my head, cheering the hearts of our much-tried and often sad home-circle. Mary is no worse, and I hope will amend still more; the rest of us are well.

"*P.S.*—I hope you *are not* swallowed up by the earthquake. —Your loving brother, GEORGE."

"*March* 26, 1842.

"Yesterday, which was Good Friday, I religiously observed by eating a hot cross bun, and enjoyed a holiday from my labours. I had been working double tides all the week with the lectures I spoke of on the calculi, and was fairly worn out with four hours' speaking per diem, not to mention the preparation, etc. But you will be glad to learn that I had an audience overflowing, crammed to the door, and scarcely even standing room to be had, and this for three days consecutively. Several elderly gentlemen attended, and said very polite things to me after lecture. The class was most attentive, gave me abundant applause, and through side channels have communicated their great satisfaction. I knew the subject, had a sufficiency of well-contrived experiments, which, as they say of fireworks, went off well, plenty of specimens from the surgical museums, diagrams, and other appliances. I was very stupid, bad headache, and no appetite, took no dinner for the three days, and had to lecture at the unpleasant hour of 4 P.M.; but that nature which has given horns to bulls, has given me a tongue which nothing but death will keep from wagging; and as I was alive, or semi-alive, wag it did, and to some purpose. The great object of this seemingly conceited prologue is to let you (whose interest in my welfare I do heartily acknowledge) see that there is the best hope for the proposed summer class, for which John Goodsir and I will now with undivided attention work.

"Mary is neither worse nor better, still a complete invalid, and requiring the utmost care. We are all otherwise well. The first blink of sunshine that reaches my hazy soul shall give

rise to an epistle to Maggie; meanwhile excuse this scrawl, my eyes oblige me to write little."

"*May* 4, 1842.

"I could not answer your kind note sooner, having been engaged for the last week in preparing lectures for a course I began to-day on animal chemistry. I delivered my introductory lecture to a good audience, who were pleased to think highly of it; and being freed from the burden of it, I can peacefully write you a few lines.

"Mary is better than she was when I last wrote, and able to be out of bed some hours daily. She cannot write, or she would tell you how much she was refreshed by your letter; it is a most difficult thing, as you say, to write to invalids, whose moods are ever changing, without the nature of their change appearing outwardly, or being always susceptible of communication by letter. But I hope we shall see her improve in the course of the summer. For myself, I have not crossed the threshold till to-day for the last three weeks; I am so lame as to be unable to cross the room without the help of a stout stick, and there is no immediate hope of betterness. The doctors forbid me attempting to walk, and gravely, seriously recommend a crutch, or a wooden leg (the latter not being intended to supplant, but to complement the living limb).

"I am in the best hands, and have certainly improved under the treatment, but it is weary work lying on the sofa when in the house, and still wearier to have to employ a coach (eating a sore hole into my small earnings) whenever I go out. I pay no visits, thinking none of my friends worth a coach fare. And they manifestly rate me at the same value, or they would occasionally despatch a vehicle for my worship.

"I have made a contract with a coachman who carries me up and down at stated hours, and I find all the consolation I can in lying all my length on the cushions, and gazing with a majestic air on the pedestrians broiling in the sun. It's a fine thing a coach, a very fine thing, and I am the only chemist, except the Professor, who can afford one; and I am inclined to think mine is the handsomer turn-out of the two. It is rather

costly, however, and a project I have set (instead of myself) *on foot*, of paying my way (literally paying my way) by offering my friends sixpenny or threepenny rides according to the distance, has not been so successful as I could have wished. I observed to the coachman to-day, that if it was not for lame people like me, he would often want a job, and that I need not expect much compassion from him. I am not sure that he knew what the word compassion meant, but he was not destitute of the reality, for he insisted on helping me up stairs, and as good as carried me to the top. One great consolation, however, still remains, in thinking of the vexation the bootmaker must feel in knowing that my shoe-soles will not be thinned by the depth of a wafer by all my locomotions.

"'God tempers the wind to the shorn lamb,'—is not that a beautiful thought? To me that expression so fully conveys the idea of the kind way in which God moulds our state of mind to our condition, that for these words alone, I can reverence their author Sterne, a man not otherwise ranked among my idols. And among the things I have lately been most thankful for, was the power at times to turn away a dark or sorrowful thought by some perception of the ludicrous in things around. Our great sources of consolation are not to be wasted on everyday griefs; but these, little as they singly are, may, by oft repetition, devour a man piecemeal. I have a friend, a solemn serious pious man, who thinks he will be allowed to laugh in heaven. I daresay he will, but if he laughs as loudly as he does upon earth (like to the neighing of a troop of wild horses), he will get a box on the ear now and then from the angel Gabriel, for drowning the melody of their harp-music.

"At this rate I don't know where I'll land next, so I shall be warned and stay my mad pen. This is a love-letter to yourself, I only send the love at present to Maggie, and bid her give the same to my dear god-daughter, who is often in my thoughts."

In a letter of this period, Dr. Cairns tells James Russell of the introductory lecture spoken of in the letter just given:—

"I never," he says, "admired anything more than your cousin's firmness in writing down the agonies of pain. I heard his

opening lecture on Animal Chemistry with great interest and instruction. He has a very fine and penetrating mind, and is marked out for eminence. We are getting wonderfully intimate, and I enjoy nobody's society more."

On May 9, George says to his sister-in-law, "Daniel will be greatly grieved, I am sure, to learn of Sir Charles Bell's death, and still more when he hears the circumstances: Sir Charles was on a visit to a friend, and during the night was seized with spasm in the stomach, to which he was subject. Lady Bell arose to get him some laudanum, but he hastily recalled her to his side, and leaned his head on her shoulder. She thought he was merely squeamish, and supported him in this position for three-quarters of an hour, till the doctor came. When the doctor looked, he found he was dead, quite cold; his poor wife had mistaken her own breathing for his, and had been unconsciously supporting his corpse all the while. He must have died in a moment; his death resulted from ossification of the large arteries near the heart, which were found extensively diseased. One of his last acts on the evening before was to make a sketch of a yew in an old churchyard in the neighbourhood. He had been struck with the beauty of this churchyard, and had said, that if asked to say where he should like to be laid, it would be there. There he now slumbers."[1]

A few weeks more, and George's struggle to keep at his post, in spite of physical suffering, was at an end. The facts are best given in his own words to his cousin :--

"*May* 24, 1842.

"MY DEAR JAMES,—I have this morning received your kind letter, which, if it has grown out of a root of sadness, bears blossoms only of mirth and humour. But so it is always,—the gravest, soberest people, by their own account, are the best comforters of those they favour with their correspondence; and I have need of all the comfort you can give me. You ask me to tell you about my lectures and pupils, and in return I have to

[1] See 'Life of Sir Charles Bell,' by Dr. Pichot, pp. 199, 200.

reply that I am obliged to abandon both. My foot, which was pretty well when you were here, has daily been growing worse; and yesterday I was informed by Professor Syme that I must abandon all active exertion, and prepare myself for the tender mercies of the surgeon. Accordingly, I am returning the pupils their fees, and in ill health and debt retire from the struggle. My only consolation is, that I have done all I could do, and have fought against difficulties till courage and patience would avail no longer. Had I known how seriously my foot was affected, I should never have begun, and I have greatly aggravated my complaint by persisting in working when I should have been prostrate in bed or on the sofa. To that I am reduced now, having yesterday concluded arrangements for relinquishing teaching. Even had the doctors not insisted on it, I could not have carried on longer. I was perfectly helpless, could not put my foot to the ground, and had to be carried up and down stairs on every occasion. I lectured standing on one foot, and had to use a crutch when I attempted locomotion unaided. Within the last week, however, the pain has greatly increased; become, indeed, perfect torture; and I rest or sleep in one unchanging and unchangeable position. When not in motion, however, the pain lulls, and perfect rest, with surgical aid, I hope will soon abate it, and lead to amendment.

"At present, however, just struck down unexpectedly from all my hopes, I cannot look hopefully to the future, and must recover the stun and shock of my fall before I become alive to all the comforts that yet surround me. But know this, at least, for your consolation, that, though often despondent, I do not repine, and do never seek enviously to contrast my own position with that of others. This much of peace of mind God has granted me, and I trust he will vouchsafe patience and courage to bear all that is sent me. I believe that, even for this world, all noble characters are perfected through suffering; and in that spirit I try to endure all things. But flesh is weak, and I know this too well to vaunt anything at present.

"Meanwhile excuse the sombreness of this letter, and do not distress yourself for me. You cannot assist me but with your sympathy, and on that I count to the fullest already.

"Everybody is very kind to me; the brethren of the Order have proved true brothers to me. The very surgeon looked concerned, as if he had no other patient to feel sympathy with. But the surgeons are more kind-hearted men than they get credit for.

"I saw Inglis and Cairns on Saturday, but was too unwell to get good of their society. Inglis, however, I can see, is a very fine fellow."

A fortnight later, additional gloom is added to the scene by a return of inflammation in George's left eye. Mary reports that, "though still a prisoner to bed, a very slight improvement is visible in the foot. He is doomed to a dark room, and Jessie spends every leisure minute reading aloud to him. Alison's 'History of Europe,' and Madame Junot's 'Memoirs,' are the books at present in use. I should have added to my account of the invalid life, that George is ordered to the country as soon as he can bear removal."

Written at such a time, the following letters may serve to illustrate the genial kindliness of his nature:—

"MONDAY, *June* 18, 1842.

"MY DEAR DANIEL,—I give the first moment of convalescence to you. I have written nobody for the last six weeks, inflammation of the eyes having been added to my other ailments, and putting it out of my power to handle a pen. I am now able to lie on the sofa, and can use one eye; but you must, nevertheless, be satisfied with a brief letter, which, indeed, I should not have written, were it not chiefly concerning yourself. But first let me tell you how much pleasure the arrival of Ann and her mamma has occasioned us all. When baby was first presented to me, lying half blind, and very indifferent to almost everything, I started in surprise, and could only find vent to my feelings in exclaiming, What a beautiful child! Truly she is beautiful, much more so than I expected, though I cannot well say what expectations I had formed concerning her. She is like nobody I know, though I daresay the lower part of her face will yet turn out Wilsonic. Her forehead is certainly from mamma's side of

the house. But, after all, a child is a *tertium quid*, and has a right to a new and perfectly original set of features. Her eyes are, without exception, the most beautiful I ever saw; and time will perfect her charms, not impair them, I feel sure. I am very proud to have such a lovely god-daughter, but I make little progress in her good esteem. I have crowed and chuckled, and whistled and sung, but the only return she makes for my advances is to put on a face like a Chimpanzee; and I have at length, from fear of marring her beauty, given up all active attempts at diverting her. I now content myself with handing her a piece of paper, over which she smiles like an angel. Nature, in truth, has been far kinder, I can see, to little babies than leave them dependent for their amusement on bachelor uncles or anybody else; and Ann manifestly only needs to be left alone to develop abundant means of self-diversion.—Yours,

"GEORGE."

"MONDAY, *June* 27, 1842.

"MY DEAR JAMES,—I have not used you well in the way of writing; you should have heard from me before this. But for the greater part of the last five weeks I have not been in a condition favourable to scribbling, and my eyes inflaming not only prevented me writing, but by occupying Jessie in reading to me, cut short your correspondents. It was on various occasions resolved that Jessie should write you; but I was so unconscionable in my demands on her time, that the resolutions never became realities. Now that I am on the sofa, I feel such shame at my behaviour, that I begin an epistle, though with such a vacuum in my brain-box that, unless I hook up a thought or two out of the ink-bottle, I do not see how I shall cover the blank paper before me. But speaking of vacuous brain-pans, I may record for your edification the reply of a singularly stupid man, who happening lately to visit Y. (who had been drinking the night before), heard him complaining of feeling a vacuity in his head, and was asked if ever he felt the same? No, was his reply. Did you never? asked the sly rogue. No, never felt any vacuity. I have suggested, as the only explanation, that his skull is so very empty as to be devoid of even a grain of sensorium; not

the finest spider-web filament of a nerve present to receive or retain the impression of emptiness. The same individual was lately met in one of these dog-days, brandishing a large cotton umbrella. On an explanation being demanded of his motive in flourishing so elegant and ornamental an appendage, he answered, 'that it looked medical.' There's some furniture in the head-piece after all! Few would contest the originality of the idea.

"I have not looked out at the window for five weeks, so of the outer world I can tell you nothing, and my inner world is not worth the looking into. I am to be shipped off to the country, Newhaven or Seafield, as soon as I can bear removal, and then I shall hope to see yourself among us. John Cairns has been most kind, has called twice a week, and brought me books, and in every way contributed more to my comfort than any other of my friends. His friendship is a debt I owe to you, and I give you a mountain-load of thanks for it. He was with us last night, and had been called on while absent by some individual, whom he supposed to be you. Have you been somnambulizing, or making spiritual progressions along the railway—the body being left behind for the sake of coolness? I did not think it could be you, but would not be positive. Make a clean breast in your next."

"*29th June* 1842.

"MY DEAR DANIEL,—I was prevented writing you last night by S. Brown coming to spend the evening with me. To-night I am alone, and may, in the first place, inform you that I am ordered off to the country, and shall remove to the seaside on Monday next. I am now nearly free from pain, except from an abscess which has formed near the heel; but as the doctors think it will prove on the whole beneficial, I don't mind the trifling amount of suffering it entails. It makes a very great difference on the feeling with which pain is borne, to know that its issue will be favourable; the same amount of it, if known to be the index of formidable or incurable distemper, would seem unbearable.

"You tell me in your last you still write verses. I have entirely abandoned the *task*, as I may truly call it in my case.

Indeed, in the utterly prostrated state of mind in which for the last year I have been, I have avoided even reading poetry. To relish it—and the same remark applies to music—I find in my case a certain elasticity and exhilaration of mind necessary. When I opened old favourites, I was so pained to find the passages I used to thrill over become flat and unprofitable that I closed all of them,—resolved that they should lie unopened till restored health enabled me with the old emotions to read them again. With the solitary exception of Milton, accordingly, I have not read any poetry for the last twelvemonth. In addition, I feel myself now obliged to devote all my thoughts to science, and blame myself for every moment which I spend away from it. I am like a stranded ship, lying powerless in the sand, with sails idly flapping on the masts, while those who set sail with me, with like hopes and chances, are far ahead out in the open sea. Every occasion, therefore, on which I feel revisitings of my old energy, is spent in making such preparations as may enable me to be ready for active service should I get afloat again. Now, poetry was never with me a mere source of idle amusement, to which I could turn for relaxation, and listlessly smile over, lying on a sofa; but, on the other hand, a field for as tough intellectual gymnastics as any scientific problem, and the pleasure arose from the new thoughts struck out by the conflict between the author and his reader. Now, however, in relaxed seasons the battle is too hard work, and the idlest book on the foolishest subject is the most agreeable. I am sure you can understand the feeling which I lamely strive to portray. I think the great poets too worthy fellows to be handled with my worn-down emaciated thoughts. I think the same of the musicians, and listen to none of them. I have felt the same towards the greater scientifics; but they are my 'daily bread,' and habit, and a sort of shop instinct, make me keep munching at them, though often out of a goodly loaf I digest but a few crumbs." . . .

"*June* 30, 1842.

"MY DEAR DANIEL,—A few words with you on whatever comes uppermost. It's but a poor one-sided apology for conversation this epistolizing, but pleasant too in its way, doing

one's heart good. As I lay on the sofa this morning, 'fast anchored' as usual, I recalled in thought a most beautiful poem, written by a young Edinburgh advocate, called Aytoun, and which you will find in Blackwood for last year. The title is 'Harmotimus,' or some similar name, and should you stumble on it, read it; besides other points of interest, it will make you acquainted with a beautiful but difficult measure, borrowed from the German, a language which infinitely transcends ours in its capabilities of modulation, and can, in fact, imitate the measures of every nation under heaven. The poem is founded on an old Greek story of a philosopher who possessed the power of separating his soul from his body, and sending the former on errands of its own. As his soul, to which time and space were nothing, was often absent for days together, he gave strict injunctions to his wife to take care of his body during its soulless condition, and not to be alarmed though it should seem lifeless even for long periods. Secure in this arrangement, he made many spiritual excursions in all safety, but at last, lingering away too long, his wife thought his body was fairly dead, and burned it. Truly it was a dangerous power to put in the hands of a woman. We know a wife or two who would be very glad their husbands had the disembodying secret, and with help of a lucifer-match would effectually secure against their revisiting the glimpses of the moon. I accuse not, however, the old Grecian matron, though hers may have been a Lucifer-*match*, which she was thankful to burn to ashes as fast as she could. But as a process for getting rid of a husband it beats arsenic hollow. Your arsenic settles Mr. B.'s connexion with this world, and once he's coffined, unless those prying wretches the chemists dig him up to analyse him, you are done with him. But there's another world, Mrs. B., and what will you say when you have to face him there? Matron Ione (please to observe it is *Ioné*, no relation of either Jenny or widow Jones), however, had fired the match at both ends, and philosopher Glaucus had 'lost his vote' in both worlds. In vain did the shivering soul come back for its body-coat; it was dust and ashes. It could not sit down in its own mansion, though empty seats, with soft cushions, were there in abundance, for the same reason that

keeps cherubs always on the wing. And then, poor soul, it had no passport for the next world. Charon demands to see a properly made out discharge from the upper world, and it did not get so much as a notice to quit. The philosopher's soul wanders yet a pale ghost on the wrong side of the Styx, while Ione has long ago been safely ferried over.

"I have been inquiring of a person lately come from Greece if he had fallen in with the recipe for disembodiment, as, having no wife to be afraid of, I might, without apprehension, put it in practice.

"I should explain to my body, that it was a hard case it must go wrong and require cuttings, and burnings, which made me (the soul) agonize, while it was indifferent, feeling none of them; explain my intention of being an absentee till it saw fit to mend matters; and then, escaping through a pore in the skull, come whizzing south, and alight upon the bridge of your spectacles, perched astride of which I could peer into your eyes and commune with your spirit. If you should feel any uneasy sensation about your nose, rub gently; souls are fragile things. Meanwhile, I have exchanged such communion with you as I can, and sign myself, soul and body, your loving brother,

"GEORGE."

"*July* 2, 1842.

"MY DEAR DANIEL,—If I could only sit upon a chair, which, like the disembodied spirit I spoke of in my last, though not for the same reason, I cannot do, I should write you longer letters. But I have to lie in a twisted position, which I cannot occupy long, and last night I took a holiday, there being no post to carry you a letter. We are making preparations for removal to the seaside on Monday; we all go down; and being at Seafield, it will enable Jessie and Jeanie to go to school daily. Seafield is no very inviting place, and there are no walks near it, but I am obliged to take a lodging near enough Edinburgh to admit of the doctors being within call. Moreover, I shall not be able to cross the threshold for a while, and then only to creep about the door on a pair of crutches, so that it is indifferent to me where I go, provided the sea and the sea-air are present.

Portobello is such an abominably public place that I should fear to move about, and I am not enticed by the attraction Mr. Syme held out of its possessing a circulating library.

"We scientifics, I can tell you, are very indignant at the recent knighting of three painters and a musician, while not one of us has, for I don't know how long, partaken of any of the smiles of royal favour. It is really too bad. We have men, I make bold to say, of far higher deserts in their crafts than the artists were in theirs. Half of Europe never heard of Bishop the musician, and would laugh to scorn his claims as an original composer. And who is Hayter, that he should carry off an honour before men admired in Europe and America? However, if Her gracious Majesty would give us some hard cash, we should not mind letting the artists pocket the stars and ribbons. There is a petty German duke enabling Liebig to beat all the English chemists hollow. If a tithe of what is spent on masquerades and trumpery, dogs and stables, were granted to some school or university to fit up and keep in existence a well-appointed laboratory, the whole country would be the gainer. Liebig is a man of genius of the highest order, and would unfold himself though he had not a sixpence; but he could not have reached the eminence he has done had not money in sufficiency been supplied him. Here our very professors can scarcely keep life in them. Chairs are not worth the having, even as sources of income, and there is no surplus to spend on experiments. As for private teachers, no one is much better than myself. Teaching is at an absolute stand. I am paying off Scott; he makes far too big a hole in a nominal income, nominal at least to me, though to him real enough. I shall make shift with a boy.

"It is really disheartening to see the possibility of doing something in a science you love and profess, almost annihilated by the cost it takes being beyond you. I have been urged to go to Paris, where I should be sure of practical chemistry classes, like those here, succeeding, but it is a long step to Paris; and I should require to know French, and a great many more things before I thought of it. Are not these fine dreams for a cripple? But if I went abroad it should be to Germany, a quiet country, which would exactly suit a politics-hating man

like me. Government there has all the university patronage in its hands, and young men of promise seldom fail to get on. Did not I meet a young fellow a little older than myself, who was Professor in the Prague University, and had, in addition, money and two years allowed him to travel where he listed? It would little vex me that there was censorship on the press, unless it should go the length of the Russian one, which prevented a traveller bringing into the country a work entitled 'Revolutions of the Heavenly Bodies.' The inspector took alarm at the first word, and objected to any revolutionary work being admitted. In vain did the traveller assure him that it was only an astronomical treatise. It did not matter, they did not approve of revolutions of any sort. The fatherland has many charms for me, which are likely delusive enough; but my motherland has charms too, and I believe I shall live and die in her much-loved arms. Now I have had my grumble out, and am a great deal the better for it. It's like a 'good cry' to a young lady.

"I have been reading the two concluding volumes of Alison's 'History of Europe.' He proves to demonstration that it's democracy is doing us all the mischief; and can name the very hour when we began to decline. All which I neither believe nor disbelieve, knowing nothing about the matter. I am a sort of aristocratical democrat, and abuse no abstract party, seeing plenty of knaves in all of them, a slender sprinkling of men with heads on their shoulders, and the great mass selfish rogues, who strive to be as little dishonest as they can.

"As a literary performance Alison excited my unbounded contempt. A more wretched style, alternating between the flattest monotony and the most outrageous bombast, no historian ever got hold of. In my literary circle he has caused us the greatest diversion by his 'havers.' He is a very honest, impartial writer, and deserving all praise for the pains he has taken. Twenty-eight years were spent upon it, fourteen in travel and study, and fourteen in composition. His battle descriptions are, I suppose, excelled by those of no civilian, and I read many of them, for example the Moscow campaign, with pleasure. But when he comes to moralize or generalize, he

maunders in very dotage. Compared with Gibbon or Robertson, or, as the scholars tell me, with the ancient writers, he sinks into utter puerility. A century hence, where will his literary reputation be? It is a readable book, however, rails at no party, enforces a doctrine of poetical justice, maintains that honesty is the best policy, that virtue is rewarded in this world, and vice punished, and will in consequence be relished by all 'respectable' people, and read aloud in family parlours."

The following portion of a letter, though without date, may justly find its place here. The remainder has not been preserved; it is addressed to Daniel. The veil which conceals his sufferings so carefully from the loving eyes of friends is for a moment lifted, and we see the strong, brave spirit in its agony:—

"With all your sorrows I sympathize from my heart; I have learned to do so through my own sufferings. The same feelings which made you put your hand into your pocket to search among the crumbs there for the wanting coin for the beggar, lead me to search in my heart for some consolation for you, if mayhap the dried up fountain may yield a drop of comfort. The last two years have been fraught to me with such mournful experience, that I would gladly exchange my condition for a peaceful grave. A bankrupt in health, hopes, and fortune, my constitution shattered frightfully, and the almost certain prospect of being a cripple for life before me, I can offer you as fervent and unselfish a sympathy as ever one heart offered another. I have lain awake, alone, and in darkness, suffering sore agony for hours, often thinking that the slightest aggravation must make my condition unbearable, and finding my only consolation in murmuring to myself the words patience, courage, and submission.

"You have done the same, and God, who has supported both of us through cruel trials, will not desert us in our great need. My religious faith is feeble, because my light is dim, and my knowledge scanty, but I pray for more. I have felt assured of answers to prayer already.

"Even in this world, I feel firmly convinced there is no

worthy character, even for worldly work, who has not been 'perfected through suffering.' Affliction has not developed the vices of my disposition; it has pruned some and banished others. My intellect is purified and ennobled, and many mists which vanity spread before me are blown away. Take comfort, my dear brother, we shall yet do well."

From Seafield, letters to his matronly friend Miss Abernethy give peeps at his invalid life, and show how every ray of sunshine was turned to account:—

To Miss Abernethy.

"Seafield, 16*th July* 1842.

"My dearly beloved, unforgotten, and unforgetable Janet, —I have now been a fortnight in this region of invalids, and think it due time to send you a bulletin of my well-doing. I am happy to say I mend, though still unable to cross the threshold, and hope soon to be able to flourish my crutches with as much grace as such untoward weapons admit of. I count some five cripples from my window, and propose, as soon as I can join, to suggest our having a race upon the sands. The prize to be a handsome pair of crutches, and each candidate to be at liberty to knock the stilts from his neighbour if he can. You may expect a visit from an official asking your subscription, and for my sake I trust it will be liberal.

"In the meanwhile, by way of preparation, I snuff the sea-air at the open window, and am complimented by visitors on the improvement of my looks. I cannot say that, on consulting the looking-glass, I see therein a very pretty countenance, but I incline to think that my modesty and well-known humility stand in the way of my discernment, and that but for these I should observe that my former knobbed and twisted nose was now moulded by the sea-breeze into a proboscis of Grecian form, and marble polish and whiteness. If the sea-breeze alone has produced so great a change, what may I expect when I am able to tumble into the water, and enjoy the benefit of wind and wave at the same time? Meanwhile, till an end so desirable is

brought about, I find my life so eventless that I can record for your edification nothing more wonderful than my removal from the bed to the sofa, and back from the sofa to the bed again, like the worthy Vicar of Wakefield, who chronicled the removals from the blue bedroom to the yellow, and from the yellow to the blue.

"The monotony of my daily life is somewhat broken in upon by the swarms of children who play about the door. They are, for the most part, the ordinary set of sinful imps to be met with here below, alternately kissing and fondling each other like so many angels without wings, and then, when the devil or 'original sin' gets into their hearts, kicking and cuffing like reprobates. There is one exception, however, to the foregoing description, in the person of a neat little lassie, with a sunburnt pretty face, and long fair ringlets. I have learned this little lady's first name, Aggy; a lady's last name does not matter much, being only intended for temporary employment, till a better name can be found for its proprietor. I of course exclude from such remarks those exalted members of the sex, whom, as patterns to mankind, Providence, for wise purposes, permits to husband their names, instead of getting husbanded themselves.

"My attention was first attracted to this young lady by a highly original observation I heard her make one day. She was lying all her length on the grassplot, kicking up her heels in the air, and proclaiming that 'Johnnie Ritchie's name was *not* Johnnie Ritchie.' Who Johnnie Ritchie is, I don't know, perhaps some relation of your friend Daniel, who may be able to say what his name is, though I fear nobody born out of Ireland is likely to throw much light on the matter. I have inquired at Aggy herself concerning Johnnie, but she preserves the profoundest silence, and looks indignant; so that what Johnnie Ritchie's name is I see no hope of discovering.

"Yesterday, had I had any Samaritan to carry me out on his back, I might have seen something out of the way. It appears that an unchristian man and woman, instead of going to church and hearing sermon, made a pilgrimage out to the Black Rocks, and seated themselves thereon, whether to meditate or gather mussels I do not know. The tide, however, came in, and sur-

rounded them, and for a while there were great hopes that they would be drowned, which would have been highly satisfactory to the lookers on, who had waited a while in expectation, and would have liked to see something after standing so long. The couple sat on the rocks, like two crows or sea-gulls, apparently resigned to their fate, till on the church's dismission, and their situation being discovered, a boat was launched, and, in addition, three stout men stripped and swam off to save the Sabbath-breakers.

"Instead of sitting still till assistance came, they proceeded now to try if they could not wade in. The first step took them over the shoulders; but nothing daunted they pushed on, and fortunately found it no deeper, though, as the wind was up, the waves came over their heads at every surge. On the whole, however, the last occurrence might be beneficial, for their heads could not be kept too cool in such a predicament. They finally found their way to shore without help of boat or swimming-men, looking, however, literally and metaphorically, a little blue.

"Such are the contents of my Seafield journal, barren enough; but I promised I would write, and you must forgive its emptiness.—Your ever affectionate, GEORGE WILSON."

"SEAFIELD, *August* 17, 1842.

"MY DEARLY BELOVED,—How fares the world with you? Except in my dreams I get no account of your ways and welfare, for all the channels by which intelligence of you used to reach me are dried up, and for anything I know to the contrary, you may be changed into Mrs. J. T. or Mrs. D. R.; and the arrival of this epistle may be the cause of a dreadful domestic scene and half-a-dozen duels. However, make up your mind to this, that the moment such intelligence, duly authenticated, reaches me, I shall commence an action for breach of promise, and make a clutch at your hoardings.

"In such a predicament, not knowing whether to address you as miss or matron (though determined whatever betide, to claim you as my Janet), I am reduced to the painful necessity of either speaking of myself, which is anything but pleasant to a man of

my modesty, and may, moreover, not be so acceptable to you as it once was—hem! or of seeking out some common topic whereon I may enlarge for our mutual edification.

"Of myself, I will only say this much, that whether you are pleased to hear it or not, I make daily invisible progress in amendment; though I grieve to say that the classicality of outline, of which I spoke in a former letter as developing in my features, is not so apparent as it was, and my nose is as red as ever. I now flourish upon my crutches and make daily excursions to the seaside, where they plant a chair, on which I sit and meditate on the ladies bathing and the other wonders of the great deep.

"But I have got something better than the crutches to progress with; my good uncle (these uncles and, above all, aunts are the great blessings of creation) has most kindly purchased a little horse, which he sends down to us, along with a comfortable gig, and I go whisking over the country, to Dalkeith, Musselburgh, Prestonpans, Cramond, and so forth, making all sorts of geographical discoveries, especially concerning the existence and site of turnpike gates and toll-bars, which have now acquired an interest in my eyes equal to that they have in my purse. I shall be in town in a fortnight, and there is no saying whither I may penetrate in my shandrydan. If you have any interest in my welfare still remaining, you may keep a sharp look-out for a little horse of a sort of ginger colour, the lightest brown, cream-colour with a slight dash of brown over it."

The seaside residence, rest, and simpler appliances, all proved ineffectual. Nature had not strength to work a cure where the evil had become so deeply seated. George's father had suffered much in the same way for years, rheumatism throughout the body ultimately settling in the ankle joints. In his case it had been thoroughly cured by care at an early stage, but the tendency was probably transmitted to his son.

After returning to town, the kind and anxious medical attendants—Professor Syme and Mr. Goodsir—cauterized the foot more than once, but all seemed in vain, and each day left less

hope in the hearts of the home circle, as his strength visibly decreased. In December a long letter to his cousin, "dear Jeems," gives token of unquenched heartiness amidst the deepening shadows. Speaking of the death of Mr. Kenneth Kemp, his fellow-teacher in chemistry, which had just occurred, he says,—

"And now that the ground is clear, I have to sit quietly by, cultivating patience, and seeing some one else step into the poor fellow's shoes. Well, seeing that *shoes* are out of the question with me, and that I could only at furthest step into another man's *shoe*, I won't be mulcted out of my patience by any man, but bide my time.

"Meanwhile, for our mutual gratification, I shall tell you a foolish enough incident, at which I laughed very heartily when I heard of it. Y— has returned to town, and is at his old diverting tricks. A vacant chair at the Medical Society has led to the ordinary amount of canvassing and crimping of voters, Y—, of course, as recruiting serjeant-major, taking the lead in the business. Night before last, Y— having parted with me, found at N—'s a certain young gentleman partaking of supper, and in a state of considerable excitation. He was at once pounced upon for his vote, and by due management the full pledge was obtained. I suppose they flattered the poor rogue terribly, for he had opened his heart to them, and told them of some lady of £30,000 who was dying for him; besides another worth some £15,000, who was in the same distressing condition. He referred to this as the explanation of what had surprised everybody, viz., his giving up a capital place, with the certainty of an appointment in the army. Well, this Narcissus carried on at this rate for some hours, drinking tumblers of strong toddy all the while; and finally, at three o'clock A.M., was handed out of N—'s place in, I fear, a somewhat overtaken condition. After he was gone, N— thinking it highly possible he might fail to find his way home, resolved to run after him and keep a look-out on his movements. Y— determined to join him, and some little time was lost in getting ready. When they reached the street they looked about in all directions for their friend, and seeing some little way before them a gentleman

engaged apparently in making trigonometrical surveys of the pavement, and occasionally knocking up against lampposts, as if to make certain that his base lines were properly measured, they followed, nothing doubting, in his steps, keeping, however, at a wary distance, as they did not wish to be detected playing the spy. The road-surveyor resides somewhere near Lochrin Distillery, so that they had a good long journey, greatly lengthened, doubtless, by their friend's eccentric mode of progression. At last, however, he reached his own door, and they halted, expecting to see him ring the bell. Not so, however; on he stumbled, and as they saw no apparent limit to his journey, and the probability of themselves finding, like Milton's metaphysical devils, 'no end in wandering mazes lost,' Y— hid himself in a corner, and N— proceeded forward to come to close quarters with the straggler. After winding and turning about the drunk man for nearly half-an-hour, at last he pushed close to him, and behold, when he looked in his face, he found they had been following the *wrong* man!!

"I asked Y— if he was quite sure he did not need a follower himself; but of course he did not. N— thinks they must have passed the fellow on their own staircase; but when I see N— I intend to ask him if he is quite sure of the direction he took, and that he really went to Lochrin.

"C—— dined here the other day, and we had a splendid discourse on various high topics; on yourself among the rest. It would have done you good to hear the generous, kindly way in which he speaks of you, and augurs great things from you. I was not behindhand in prophecy either. And we consoled ourselves for our overflowing goodness, and counteracted the too Christian mood into which we were falling, by judiciously pointing out to each other such spots as we had seen in the sun of your genius. A list of your faults will be forwarded by either of us on a receipt of 500 queen's heads (for the parcel is rather bulky), and a letter post-paid."

CHAPTER VII.

CONVERSION: ITS PEACEABLE FRUITS: RETURN TO PROFESSIONAL LABOURS.

"Deep calleth unto deep . . .; all Thy waves and Thy billows are gone over me."

"Cast down, but not destroyed."

A CRISIS was again approaching in George Wilson's life more momentous than any hitherto considered. At the close of the year 1842 it seemed evident that the contest with suffering could not last much longer, rest being only attainable through the use of opiates.

A record in his own words[1] conveys forcibly a statement of the facts: "I was required to prepare, on very short warning, for the loss of a limb by amputation. A painful disease, which for a time had seemed likely to yield to the remedies employed, suddenly became greatly aggravated, and I was informed by two surgeons of the highest skill, who were consulted on my case, that I must choose between death and the sacrifice of a limb, and that my choice must be promptly made, for my strength was fast sinking under pain, sleeplessness, and exhaustion.

"I at once agreed to submit to the operation, but asked a week to prepare for it, not with the slightest expectation that the disease would take a favourable turn in the interval, or that the anticipated horrors of the operation would become less appalling by reflection upon them, but simply because it was so probable that the operation would be followed by a fatal issue,

[1] 'A Letter to Dr. Simpson on the Anæsthetics in Surgery, from a Patient's Point of View.'—Simpson's 'Obstetric Works,' vol. ii.

that I wished to prepare for death and what lies beyond it, whilst my faculties were clear and my emotions comparatively undisturbed, for I knew well that if the operation were speedily followed by death, I should be in a condition in the last degree unfavourable to making preparation for the great change."

Being thus brought face to face with death, let us inquire what fitness he had to meet it. From boyhood onwards evidences have not been wanting of his interest in religion: a sense of life in its higher developments being imperfect without it, seems to have been felt even in his most ardent longings after success in scientific pursuits; while a deep reverence for God, and a groping after Him in vagueness and darkness are perceptible in early letters. So blameless was his youth in the estimation of his fellows, that one of the most intimate friends of his student-life has indignantly repelled the thought of conversion being needful, declaring that "he was always a Christian." Scarcely consistent with this estimate is the compromise with conscience when preparing for his last examination for the degree of M.D.: "On the Sunday I went through the morning service of the prayer-book at home, and then took to Surgery, which I nearly finished that night."

Relatives younger than himself received kindly sympathy and encouragement from him in their Christian profession,—he was too generous to cast a stumbling-block in the path of a "little one,"—yet with all this, one thing was lacking, and often was it said, "If George were only a Christian, what a noble character he would be!" And this desire, transmuting itself into fervent prayers, entered into the ear of the Lord of Sabaoth, to be answered in a way little anticipated, by "terrible things in righteousness."

For some years previous to the time of which we now speak, Dr. Cairns had visited the household as an intimate friend. To him James Russell owed deliverance from many doubts and difficulties, and a clear perception of the method of salvation, and this formed an endearing bond of union, so that John Cairns became by degrees like one of the family. His influence over George was of great power and immeasurable value,—the very difference in their casts of mind forming a strong bond of

attraction. Reminiscences by Dr. Cairns confirm these remarks :—"General conversation was often succeeded by discussions such as might be expected from a student of divinity visiting a pious family; and though George took at first little or no part in these, gradually he began to feel interested; and we used to have long and earnest talks when others had withdrawn. I cannot recall accurately his religious difficulties. He had no sceptical tendency, beyond a general inability to reconcile the gospel as miraculous with the uniformity of nature; and I think, too, that some misgivings disturbed him as to the doctrine of the Atonement. But his great want was the power to realize the value of the gospel remedy, from his heart having been greatly set on literary and scientific eminence. God took his own way to abate this hindrance by sending ill health, and thwarting all his plans of rapid elevation. A very slow yet steady increase of interest in eternal things now set in; . . . an extraordinary change took place in his use of the Bible. The phrase quoted in his 'Life of John Reid,' that he "had a sair wark wi' his Bible," describes his own state exactly; and we used to discuss, I think in the company of his [elder] sister, many passages. He was especially devoted to the Epistle to the Hebrews, which he valued for its clear view of the Atonement and of the sympathy of Christ; and no part of his Bible is so much worn, this being indeed almost worn away. I used to report to him the discourses of my late venerable friend, Dr. John Brown, spending the interval of service every Lord's day, as well as the Saturday afternoon, with him; and I rather think that, when his illness confined him to bed, I was in the habit of offering up prayers. I remember, with vivid accuracy, the earnestness with which, on the last occasion I saw him before the operation, he spoke of the danger before him, and of the great anxiety, mingled with trembling hope in Christ, which he showed as to his spiritual state. He took the Bible, asked me to read and explain or enforce some passage, and then pray. The remembrance of that day survives, while the multitude of other conversations have left only a vague impression of progress and saving enlightenment."[1]

[1] 'North British Review,' February 1860.

This gradual enlightenment of mind may clearly be traced within the last two years. Step by step had God been leading him into the wilderness, that there He might plead with him face to face, and now he was not far from the kingdom of heaven. In the estimation of some of his most devoted friends, he was already a child of God; so great was the change at hand, however, that he always dated the dawn of the new life in his soul, when, with death in view, he was enabled so to realize the mercy of God in Christ Jesus, as to come to Him weary and heavy laden, and enter into that peace which passeth all understanding. In a letter to a friend not long after this period, he says, "When I was recently struggling in a 'great fight of afflictions,' soul and body racked and anguished, my life hanging in the balance, and eternity in prospect, I prayed to God for light and help, and my prayer was heard and answered."

The week of delay granted by the surgeons passed slowly yet swiftly away. He concealed from the relatives around what was at hand, partly from an unselfish desire to spare them the grief it would cause, and partly from a fear that his resolution might be shaken by witnessing their distress. A small Testament was his constant companion, and every available moment up to the coming of the surgeons was devoted to its perusal. For very life he searched; like Bunyan's pilgrim, for "life, life, eternal life."

On the morning of the operation, with a "trembling hope in Christ" in his heart, he performed his toilet with unusual care, in order to disarm the apprehensions of those beside him, in whose hearts an instinctive fear lurked, knowing that the surgeons were to come that day. However, the *ruse* was successful, and the truth was only revealed to them by the irrepressible cries of agony from the sufferer. In an adjoining room the little group was assembled, and to this very day the scene is as vividly before the eyes of the survivors, and the cries ring as loudly through their hearts, as in that hour of anguish.

"During the operation," George says, "in spite of the pain it occasioned, my senses were preternaturally acute. I watched all that the surgeons did with a fascinated intensity. Of the agony it occasioned, I will say nothing. Suffering so great as

I underwent cannot be expressed in words, and thus fortunately cannot be recalled. The particular pangs are now forgotten; but the black whirlwind of emotion, the horror of great darkness, and the sense of desertion by God and man, bordering close upon despair, which swept through my mind and overwhelmed my heart, I can never forget, however gladly I would do so."[1]

The object in recalling such painful emotions was to make them an argument for the use of anæsthetics, which, had they been then in use, would have robbed this experience of the greater part of its horrors.

The operation was an interesting one in the annals of surgery. He says to James Russell shortly afterwards, "I do not wish to trouble you with surgical details, but you will be glad to know that the operation I underwent was a novel one (tried on me by Professor Syme for the second time only), which leaves me the whole leg, depriving me only of the foot. It was more protracted and painful than the ordinary one, but it leaves me a more useful limb; and the doctors hold out the hope of my being able to limp about with a wooden foot, or stuffed high-heeled boot, without betraying to every eye the amount of my loss."

A time of miserable suspense followed, from the fear that his strength was too far gone to rally; and quiet being enjoined, for days there seemed not a sound in the house. The rather secluded square in which he resided was a special haunt of musicians, whose barrel organs, Irish bagpipes, and violins, might have enabled one to tell the day of the week, had other means of discovering it been wanting; for each day failed not to bring its own train, week by week. Strict watch was kept over them, and they were induced, by bribes, to pass out of hearing. And in this night of darkness, the devotion of friends shone out like stars, in a way never to be forgotten. In one family, when the sad news was announced, dinner was removed untouched that day; and whispered inquiries were made without ceasing at the house door. In a diary of James Russell's, we find the following entry on the 16th of January, illustrative

[1] Letter to Dr. Simpson.

of the state of things:—"Appalling *yet comfortable* news of George's amputation."

A letter to him from Dr. Cairns remains as a photograph of those days of trouble:—

To J. M'G. Russell, Esq.

"*January* 17, 1843.

"My very dear Friend,—You are no doubt discomposed, as I myself have been for some days, by the operation performed on Dr. Wilson. As I happen to have been thinking of him perforce for some time with peculiar interest, you will, I have no doubt, welcome every particular. Everything, by the special blessing of God, has as yet gone admirably; so much strength of mind as to resolve to keep all to himself till the crisis; so much coolness and presence of mind as to impose on all who saw him; so great firmness during the operation and composure after it; such a comfortable wearing off of the first rude shock produced in the family, without detriment to the health and spirits of any; and so favourable a progress hitherto of the wounded limb, all certainly are most striking and consolatory; and whether we suppose any supernatural[1] grace or not, call equally for gratitude to Him whose benignant providence is the only present help in trouble. After an absence of three days, I had the happiness of seeing them all to-day in circumstances of peace and hope. I was also admitted for a few minutes to the room of the doctor, and exchanged a few words, and engaged for a very short time in prayer. He is, of course, weakened; but the expression of countenance, and look of self-oblivion, which I never saw him lose in the worst days, are the same. . . . All danger is now, humanly speaking, over, and I trust our prayers and anxieties, which are already passing into thanksgiving, may soon be for nothing but grace to improve past affliction and deliverance."

It was on this visit that John Cairns, the ministering angel of that sick-chamber, was able to come forth with an announce-

[1] *Supernatural* seems here used by the writer in a sense akin to *preternatural* or *miraculous*.

ment that in the mind of the sufferer all was peace and joy. To the sorrow-stricken mother this was an unspeakable comfort. "If *that* be the result," she said, "then all is well." An expression of sympathy with his sufferings made by her, called forth the remark, "Don't regret them; think how much better off I am than so many in the Infirmary. Besides, I have learned from them to look at things in a new light, which is worth them all."

From letters of later years we gain further insight into the mental struggles of this season, the more precious, that, being averse to speak much of his inner life, a few earnest words uttered when the deeper emotions were stirred, were all that ever could be obtained. The first extract is from a letter to Dr. Cairns on New Year's Day, 1854:—"There is no day so painful to me to recall as the 1st of January, so far as suffering is concerned. It was on it, eleven years ago, that the disease in my foot reappeared, with the severity which, in a few days thereafter, compelled its loss, and the season always comes back to me as a very solemn one; yet if, like Jacob, I halt as I walk, I trust that, like him, I came out of that awful wrestling with a blessing I never received before; and you know that if I were to preach my own funeral sermon, I should prefer to all texts, 'It is better to enter halt into life, than having two feet to be cast into hell, into the fire that never shall be quenched.'"

And to a young friend he says, in 1847:—"I can profoundly sympathize with your feelings of agitation, agony, and alarm, at finding your strength and health failing, and another world looking closer at hand than it did a short while ago. I have been in this condition, and only passed out of it after a spiritual struggle such as I still feel appalled at gazing back upon.

"When I was recovering, you can well believe that there were many weary, wretched, sleepless hours, especially during darkness. Particularly dreary was the first waking in the dull grey morning. Despair seemed ready to overwhelm me. It was then I fully realized the unspeakable preciousness of prayer, and that not to an overwhelming mysterious agency such as electricity or gravitation, but to an *agent*, a person, and he not separated from me by all that intervenes between God and man;

but possessing, as I possess, a human nature, though (unlike mine) his nature is sinless, and is unspeakably glorious."

Recovery proceeded favourably, so that in six weeks the wound had closed—all but one small aperture, and he was able to move about a little on crutches. "He came forth with a spirit strengthened from heaven, to bear the life-long burden of a feeble body, and to accept life on the most disadvantageous terms as a blessed and divine ministry. The inward man had gained infinitely more than the outward man had lost; and, with all his originally noble qualities exalted, there was found a humility, a gentleness, a patience, a self-forgetfulness, and a dedication of life to Christian ends and uses, which henceforth made every place and work sacred."[1]

What has been truly called "his unconquerable gaiety of heart," is seen in one or two notes written in the first few weeks after the amputation. The first two are addressed to James Russell, who was giving expression to his sympathetic love in all kinds of presents, to cheer or amuse the patient. One of these was an accordion, which he fancied might help to beguile the tedious hours of convalescence. The first letter is merely dated "Friday," but it is evidently written about the close of January :—

"My dear James,—Your kind letter demands something more than a mere statement in Jessie's bulletin concerning me. I could write you a whole folio of news from the world of pain, so far as intellectual capacity is concerned, or even physical strength, but I have to lie in such a constrained twisted posture, propped up by pillows, and what not, that I can hold the pen for only a short period at a time. But I can at least tell you, that my case proceeds steadily, to my own comfort and surprise, and to the satisfaction of the doctors. I am now lifted out of the region of acute suffering, into that of dogged endurance of quite bearable pain, and am losing day by day the spectral ghastliness which made me for days look, while sleeping, like a corpse.

"I have no repentance or repining at the step I took, or the loss I sustained. It pleased God, who speaks to some with the

[1] 'Macmillan's Magazine,' January 1860.

still small voice of gentle persuasion, to address me in the whirlwind and the storm, and to vouchsafe me, in the prospect of sore trial, a calmness, even a serenity and patience which could have been supplied me from no other source. I look back on the last month with wonder and speechless gratitude, and place my reliance for the future on the same mighty arm which wrought my deliverance from past affliction.

"When you pray to God, let thanksgiving mingle with *earnest* request that more light, and stronger faith, and greater self-renunciation, and all other needful gifts, may be given to me, still standing on the threshold of Christian experience.

"It's a strange thought, the idea of your foot dying before the rest of you. Well, I'll find it at the resurrection, or, if not, something better. I have likewise been thinking that my mind or soul must be in a more concentrated condition than that of *bipeds*, seeing that it has a *foot* less of matter to encumber it. What thinks your lordship? The receipt for concentration admits of extension; I am contented with the amount in my case. I have no feeling of the want of a foot, and seem still to feel toes, great and small. John Cairns thinks this must arise from a pre-ordained harmony between soul and body!!! Well done, John!

"All that I have already written has been intended to get up the steam for what I now struggle out with, viz., that if, when you held out those magnificent offers about Boerhaave and Turner, you thought that I would generously decline your kindness, you were, my dear sir, very very much mistaken.

"Your kindly offer made my morning tea and toast taste like very nectar; I told it to my kind doctor, John Goodsir, the moment he came, and asked him; no, he asked me, would I accept the offer? Won't I? was the polite answer. So, my dear Jeems, you're in for them. Boerhaave I have studied in Latin about the thermometer; he'll be of great use to me for my history. Turner is precious also. I will most thankfully and gratefully accept your offered kindness, and will remind you in return that you will enjoy the consciousness of having performed 'a virtuous action.'—Your loving affectionate

"GEORGE WILSON."

"*February* 7, 1843.

"MY DEAR JAMES,—I lie at present in such a strange twisted position, half on my back and half on my side, that my views of all matters are quite *one-sided*, and even if I feel properly concerning your late kindnesses, it is such an exertion to scrawl, that my eloquence of gratitude is strangled in the birth. Know, however, that both parcels arrived safely, and that I boasted and exulted over my chemical treasures like a child over a new toy. Even grave Mr. Syme had to take a look at them, and congratulate me on their arrival. Your mysterious note was beyond me, but I came to the conclusion that it signified that you yourself were coming. This morning, however, the melodious stranger [the accordion] arrived in due season, and being released from his swaddling bands, was gazed at with wonder and delight. Before a week is over I shall have composed a symphony in X Y Z on the street door key, which shall ravish the ears of all who hear it.

"Meanwhile, my dear kind cousin, speech really fails me, and you must suppose my ugly phiz looking into your angelic one, and symbolizing and expressing the intensest gratefulness; otherwise I know not how I can make my heart speak to you.

"My feelings got so much the better of me at thinking that my dancing days were over, that I had to give them outlet in the shape of an elegy, which (with the help of a little snuff in your eyes) I shall expect you to weep over.

No more shall I, in country dance or reel,
Labitsky's waltz or Musard's last quadrille,
Shuffle my feet, or make my body wheel
'On light fantastic toe.'

When I creep outwards to the light of day,
The people passing me will turn and say,
That little fellow limping o'er the way
'Has one foot in the grave.'

"I continually improve, and feel most thankful for my present hopeful state. I strive to let 'patience have her perfect work,' but flesh is weak.

"And now, my dear cousin, forgive this rotten note; I can at

present write no better; when I reach the sofa, you may expect something more rational.—Your loving

"We are all well." "GEORGE."

To MISS ABERNETHY.

"*February* 6, 1843.

"I am sure you will be very glad to see a few scribbled lines from myself to say I am getting better. Although still with aches enough to make a man who had never been ill think himself in a very miserable way, I have come out of such a gulf of pain and weariness of flesh and spirit, that I feel very thankful for being so well as I am, and am back to many of my old tricks, though still but in a rickety condition. I owe you thanks for that refined calf-foot jelly which you so kindly sent me. But in regard to it, I wish particularly to know if you have turned a homœopathist in your medical practice, and were induced to send me that instead of any other delicacy from a belief that a dose cooked from the foot of one calf would be likely to prove beneficial to the ailing foot of another. If so, I admire your philosophy, and have improved on it, for my diet consists chiefly of the flesh of chickens, to which I have betaken myself, from a remembrance that these worthy animals spend a great part of their lifetime standing on one leg; a feat which, now that I am struck off the list of *bipeds*, I cannot learn to perform too well, and which the infusion of their substance into mine may conduce to make more easy and, as it were, natural to me. . . . . In sober seriousness, I have every reason to be thankful and contented with my progress, and I try to lie as patiently as I can, while the weary days and still more weary nights slowly glide away.

"I can write no more at present, but be sure that though they should chop all the rest of me into little bits, so long as they leave the heart of me untouched, I shall be your unchangeable

"GEORGE WILSON."

"*The Sofa, March* 11, 1843.

"MY DEAR JAMES,—You have long been an enigma to me in

your intellectual relation. I am sure the highest success in oratory, true oratory, heaven-born eloquence, lies within your power; you have every gift that should make you a very Demosthenes, and yet your lips are sealed; the mere gift of utterance is denied you, or rather has never been developed by you. I always think of you as a great river dammed up by a floodgate, so that the water only escapes here and there through holes and by channels, and nobody sees its greatness of volume. You are to blame, Jeems, for never cultivating the mere talkee, talkee habit. All the follies of debating societies are worth enduring for the readiness they give a man in bringing his thoughts rapidly to the surface in the shape of words, and in accustoming him to think of moulding his thoughts into the form best fitted to influence others. A thoughtful, silent dweller in solitude like you, thinking for the sake of your own satisfaction only, must find it an effort to throw these thoughts into a shape suited to the grasp of others, and especially of inferior minds, and this to a greater extent than weaker intellects better practised will do. This is a horrid lecture I am inflicting on you, but I must tell you that you have a noble gift of eloquence in you, would you but take the trouble to dig and wear away a channel for it to flow in. I would not enter the lists against you on any subject where our knowledge was equal, with any hope of success, if you had half the practice I have had as a speaker. It is not popularity, Jeems, I wish you to fight for; it's worth nothing, nothing, nothing. It's to fight against the worldliness and materialism of the age, and smite down the little men who are leading it astray. What effect would all the physical science crew have in lowering public taste if a gifted professor of the absolute like you would come down from your solitary dream-filled altitudes and oppose them? We, *physiker*, have too much of the public ear; our stuff is more apprehensible than yours; but you should roar the louder down the trumpet. My dear brethren, I will conclude with a question or two. Whether do you expect to bring your audiences up to you, or to have to descend to them? Or may the difference be split? This may be, but split with a greater descent on your part than ascent on theirs. You may *write* in the loftiest vein, but to *preach* in any *very* high one to ordinary audiences

is beating the air. This is a horrid truism, Jeems, but you'll not wriggle yourself out of it anyway.

"Have you read George Moir's additional chapter to the 'Tale of the Tub' in Blackwood? If not, you'll be greatly delighted with it. It's the finest piece of humour I have read for years.

"I learn that the price of bacon is expected to rise immediately, owing to the great number of penny-pigs about to be put in requisition to collect money for the dis-established ministers.[1] Ladies are running about as pig-drivers in all directions, even through the hungry High Street, mulcting the poor starvelings of their pennies. But then, you know, it's all quite voluntary. Report says that the ministers' wives are not able to see their way so clearly as their husbands do, and that curtain lectures are delivered nightly to growing refractory audiences. The reporters, however, are not admitted, and the result can only be gathered from the sleepless yawns of the morrow's morn. Meanwhile, it is loudly given out that the clergymen themselves are removing to attic flats and cheap garrets in all directions, and the designs, at least, have been made public for the wooden churches.

"Two young ladies have just called. Goodbye! goodbye!"

While all was going on favourably as to George's health, and hope was once more springing up in the hearts of those around, dark clouds again closed over them.

A month later than the preceding letter, a quiet evening was broken in upon by violent ringing at the bell, and immediately the house was filled by a crowd of people. At first the cause of this was unknown, and only a sense of something terrible having happened, was felt. It was the dead body of George's father they were bringing in. Having left the house some hours previously in perfect health, to all appearance, he was returning in the company of two friends, and had almost reached home, talking with cheerful animation, when suddenly he stopped in

[1] A year later than this, we find the following sentence in a letter to Dr. Cairns: "The Free Church goes on nobly, showing far less of human pride or weakness than might have been expected, and even allowed."

the street, and in a few minutes life was extinct. The cause was supposed to be aneurism of the heart. There could scarcely be a more touching sight than when George, pale and feeble, entered the room, and passed slowly on crutches through the crowd to the bed on which the corpse had been laid, to see if it were really true, and not a horrible dream. Alas! at such times our hearts *know* the truth, even while the senses try to disbelieve it.

James Russell at once joined the sad circle, and spent a few days with them. On his departure George wrote, according to promise, to report progress: "I may dismiss myself in a sentence," he says, "by stating that I am excellently well, and my foot *mending*, to use a peculiarly expressive phrase."

A few weeks later, a visitor from Glasgow having carried back gloomy accounts to James, he writes re-assuringly, "I am really improving; I was half expecting I should require a touch of caustic from the surgeons, but things are looking so well that, in the meanwhile, I expect to dispense with their tender mercy. I am out every day; yesterday I made a tripodal journey round the Willow Grove garden four times. Can I give you a better proof that I am really recovering? I will hereafter always honestly inform you of my state, but at present I have not seen a surgeon for a fortnight and more, and I have dined out twice within a week.

"I must make fresh claims on your sympathy with me as one involved in the miseries of 'flitting.' Every day reveals some new and more horrible phasis of the detestable crisis we are in. Blankets, table-covers, even carpets, are taking wings to themselves and fleeing away; and I have to keep a watchful eye on my crutches, lest they abscond in company with some migrating grate, and I be 'left lamenting.' I cannot say that I am, like Niobe, 'voiceless in my woe.' Is it not one of the privileges of a free Briton, and healthful to the lungs (and *spleen*), to grumble, and that loudly too? I liken myself rather to Marius sitting among the ruins of Carthage, presenting to the world, nay, to the universe, the edifying spectacle of 'a great man struggling against the storms of fate.' With what a deep sympathy I read the answer of the colliers to the question, 'Why

their houses were so empty of useful household articles? That 'furniture was an unco fash at a flittin'!!! There, my dear cousin, is a great idea, which, however, if carried out, would lead to very *naked* results."

The removal alluded to was to the house in Brown Square, which he occupied for the next nine years, its great attraction being that his lecture-room and laboratory were under its roof, and he was able to attend to the duties connected with them, even when prevented by ill health from going out of doors. To go from his bed to his lecture-room was no uncommon thing for him in the years that followed.

The satisfaction with which the healing of his foot in the month of June was contemplated, was speedily changed to renewed anxiety, on finding unmistakable symptoms of pulmonary affection. He spent the rest of the summer in a secluded retreat, for which he had a great liking, in Jordan Bank, Morningside. Occasional drives, and sitting in the quiet garden (to get oxygen, as he used to say), were serviceable, and he was prepared, when the winter session opened, to resume his professional duties. They were increased by his appointment, with the sanction of the Highland and Agricultural Society of Scotland, as Lecturer on Chemistry to the Edinburgh Veterinary College, and by a similar appointment to the School of Arts. A course of lectures to young ladies at the Scottish Institution on Saturdays, was also begun in November, involving altogether ten lectures a week. To a sister he writes, November 26:—

"You will not suspect me of vanity if I tell you a thing or two about my lectures. I have twenty students at my ten A.M. medical class; forty at my twelve o'clock (three days a week) veterinary class; some hundred young ladies at the Scottish Institution; and some two hundred stout fellows at the School of Arts.

"It is sometimes difficult to disentangle the one from the other, and, accordingly, I called the young ladies *gentlemen*, and made them all smile. Last Saturday, however, I took care to write on my notes, at various places, the word *ladies*, to prevent mistakes, and, as I had abundance of magnificent experiments, the bonny lassies looked bonnier, and were all well pleased.

"I shall never forget the first sight of the sea of faces at the introductory lecture at the School of Arts, rising tier above tier, piled to the very ceiling. I cast my eye around for a familiar face, and lighted on uncle's white head, like the foam on the crest of a billow. A dragoon soldier likewise attracted me with his red coat and his mustaches, and I now look instinctively for him. He is a Scots Grey, a fine tall fellow, and must have stuff in him to come there all the way from Jock's Lodge. He takes notes, and is very attentive; I take quite an interest in the worthy soldier. This class is rapidly increasing under my care over its former numbers, and is my favourite class. My great pleasure in it is lecturing to the working people, to whom I may do intellectual and moral service."

"Whatsoever ye do, do it heartily," was evidently more than ever George Wilson's motto. He could not give a lecture without taking much more trouble than was necessary in preparing for its illustration, and in the School of Arts this was most evident. His lectures were usually delivered from notes, and a few of those written for this audience, and used for no other, remain as evidence that some of the finest specimens of his powers as a speaker were elicited by this favourite class. The enthusiasm with which they responded was abundantly proved by the band of chemists which then began to form, many of whom have forsaken all else to prosecute this branch of science, both in its scientific and its practical departments; while it would be vain to attempt a calculation of those whose minds were elevated by its study, pursued after days of toil. At one of the introductory lectures, he requested the crowd outside to permit him to pass in. But they, looking round and seeing only a little man in pea-coat and cap, indignantly declined, to his great amusement. A laughing assurance that in that case they should have no lecture, soon cleared a passage for him. A grateful expression of the pleasure received, was left each evening (the lectures were once a week), by one pupil, a gardener, in the shape of a bouquet of the most choice greenhouse flowers. This gardener emigrating, he left an injunction with a friend, also a pupil, to continue the offering. It would have gratified them to see the intense pleasure with which, on his return, jaded,

from the lecture, he lay on the sofa and drank in their beauty. Nothing beautiful was ever lost on him, and knowing this, many loved to minister to his pleasures; so that in his sitting-room, at every season of the year, there might be found vases of lovely flowers. One of the pupils[1] of the session 1844-45, whose later career has been marked by unusual success, thus speaks of this class:—"The students were chiefly artisans, self-educated, though there was a sprinkling of youths of higher ranks in society. They (the latter) were generally very young, I myself only fourteen, and attending the High School classes. The same qualities of head and heart which have subsequently distinguished Professor Wilson among the many eminent professors of the Metropolitan University, then distinguished him among the teachers of the School of Arts. There was the same power of riveting the attention of his audience, nay, almost fascinating them; the same playful fancy and poetical prose in his prelections; the same Christian catholicity of heart; the genial sympathy with the 'pursuit of knowledge under difficulties;' the same familiar, homely mode of illustration; the same aptitude in experiment; the same affability to his most humble and obscure student. These qualities combined to render him at once the greatest favourite and the most efficient teacher among his colleagues at the School of Arts. I well remember the enthusiasm which his prelections and experiments stimulated in myself—displaying itself in a course of private experiments at home, and leading, at the close of the second session, to a 'Chemical Association,' where a fund was raised for apparatus, papers were read, discussions held, and experiments conducted. More than one of the members of this Association are now well-known citizens or flourishing merchants of Edinburgh."

This Tuesday evening lecture at the School of Arts was one of the most exhausting duties of the week. "Well, there's another nail put into my coffin," was often a remark made on throwing off his outer-coat on return. A sleepless night almost invariably followed; and Wednesday came to be recognised as a day when his friends might visit him without fear of disturbing literary work, as lassitude forbade any attempt at it.

[1] Dr. Lauder Lindsay, Pitcullen House, Perth.

In the previous summer, George Wilson's generous nature had been aroused on behalf of his friend Dr. Samuel Brown, whose experiments on transmutation were exciting intense interest in the minds of scientific men. The fifty simple elements, up to this time believed to be indecomposible, he asserted were capable of transmutation, one instance of which he gave in processes for transforming carbon into silicon. Dr. Brown was a candidate for the Chemistry Chair in the Edinburgh University, then vacant, and his success in gaining it seemed to hang upon the confirmation of his new views. Invalid though George then was, he left no stone unturned on his behalf; and in a letter to the Lord Provost, in September 1843, printed and widely circulated, though not published, he strongly advocated Dr. Brown's claims on the Chair, independently of the transmutation experiments. With this preface, we turn to George's letters for information as to his occupations during the session 1843-44, in which he laboured to verify the experiments in question, and which afford an example of devotion to a friend's interest with few parallels, if any, in the annals of science. In October he laments the absence of his friend Dr. Cairns, who had left for the Continent: "I cannot tell you," he writes, "how much I shall miss you on Sabbath-days. I have not much prospect of being often inside a church this winter, and I feel how great my tendency is to grow languid in earnest devotional feeling when cut off from communion with fellow-Christians. But is not the very isolation from others as much intended for a part of preparatory probation as sore physical agony or mental distress? It must be so, and the conviction that it is, soothes my regret at parting with you, from whom I have learned so much. You will pray for me, however, and send me a word of advice at times, and I will try to 'let patience have her perfect work.'" Again to the same friend he says, December 27, 1843:—"I sit down to write you with great shame and confusion of face at the thought of the time that has elapsed since I received your Hamburgh letters; but, in truth, I have been so occupied that I have never had the leisure to sit down to write you calmly. The repetition of Dr. Brown's experiments has engrossed me day and night, and still occupies my time; and I have been so

fatigued with my laboratory work, that when I left it I had no spirit to write you even a few lines. . . . . I have great reason to be thankful for the health I have enjoyed since you left, though it has not been uninterrupted. I had got so far on in the way of limping about on a stick, that I was promising myself a visit to church, and the pleasure of hearing a sermon, when my hopes were disappointed by a fall down stairs, which sprained my knee, and doomed me to bed and sofa for a fortnight, and to another leaf out of the book of physical affliction in which I have lately had to read so many lessons. I have read somewhere, that in the lives of men, if wisely watched, may be discerned the finger of Providence, teaching each by a kind of lesson peculiar to himself; so that on one bodily affliction, on another mental sorrow, on another pecuniary distress falls,—the same kind of trial returning again and again, while the sufferer is exempt from other forms of woe. I have sometimes thought there was a little truth in it, and you can suppose in what way I apply it to myself. But in reality every sorrow bears others in its bosom, and trial in one shape must always be more or less trial in all. This is a foolish speculation, and one I do not seek to indulge in. So long as I feel every lesson less than sufficient to teach me the patience and faith I so much require, I feel every disposition to look with a cold eye of curiosity on God's dealings with me, at once silenced. I know now enough of the 'peace that passeth all understanding,' to welcome the attainment of more of it at any price its great Giver may afford it to me. Is there not something presumptuous in that expression? There is only humble hope at least in my heart.

"A week has elapsed since I wrote the preceding part of this. . . . Yesterday I received your second letter, on which I would expend much praise, if it would not waste paper. Suffice it therefore to say, that we all read it with pleasure, and that I have no wish you should displace Schelling or Neander in your descriptions, by any of the great *physiker*. I get enough of them, and need accounts of the others to keep my soul from growing altogether one-sided. Judge of this by the life I lead at present. At ten A.M. I descend to the laboratory, where I

work till four P.M., driving out, when the day is fine, for one or two hours. The interval between four and six is spent—how do you think?—in sleeping, positively in slumbers, so wearied am I with my day's work. At six I descend again, and remain till nine or ten, and when I come up again, some talk with Mary, a glance at an 'Athenæum,' and I am ready for bed. For the last six weeks I have scarcely got so much as the newspapers read, and have been thankful to secure a chapter of the Bible, and leave all else unread. Much of this labour has been spent on mere drudgework—analysis of soils, wheat, etc. But the chief cause of such working has been the great question of transmutation, at which I may, without any exaggeration, say I have laboured night and day, and laboured, I am sorry to say, to very little purpose. Two of his [Dr. Brown's] cousins, and Mr. Goodsir, besides myself, are conjointly working at the repetition of his experiments. . . . . It is a period of great anxiety to us all, convinced as we are that nothing but the fullest confirmation of his views will obtain for him the chair. . . . . Pray for us, my dear friend, that we may be kept from falling. You comfort me greatly by the thought that you pray for me. I am calm, contented, and cheerful, labouring with a peace I never knew before. . . . . Oh! my dear *prediger*, spirits of wine at 2½d. per bottle (quart, eh?). The statement affected me more than all about the professors and *metaphysiker*." To a sister he writes about the same time :—"I am better, not yet able to use my leg again, but very busy. I compose a great many rhymes to keep us in good humour down stairs. These you shall be favoured with when you come: they are not carriageable articles. I have got Jamaica soils to analyse at present, and I am seeking for pounded missionaries, and crystallized tears of emancipation-seeking negroes. I have found some of the latter, very like chucky stones."

"*January* 28, 1844.

"I was at church yesterday, and heard a very pleasant sermon. Had it been bad, even very bad, I should have been thankful, but it was the very opposite. We have got James safely among us, and I hope he will improve on our hands. For improvement there is great need, as he is wofully thin and pale, and sorely

depressed in spirit, but I look hopefully to his stay with us as likely to be of good service to him.

"I am on the whole well, and having at last got my shoe, am limping about with a couple of sticks. I hobble painfully along in an awkward way, the shoe being far from comfortable; but as I never indulged extravagant expectations of its gracefulness, I am quite content when I compare my present condition with that of my previous one, mounted on the uncomfortable crutches. In truth, my dear Jessie, if we could learn contentment, we should find it a greater acquisition than happiness, or beauty, or wisdom, or wealth. . . . .

"God bless you, my dear sister, and watch over you. A sense of His infinite willingness and ability to succour us, and a firm realization of the great truth that His ear is ever open to our prayers, is a precious attainment. For you and for me Jesus Christ died; to know that, and to make it a wellspring of devout gratitude and obedience, is at once a high duty and a great joy."

The following note, though without date, is evidently written about this time :—

"DEAR JESSIE,—Great occupation and unwellness (not illness) kept me from writing last week, although I had a famous subject in the burning of the Greyfriars [Church] into the Black or White Friars, I do not very well know which. I sat gazing at the combustion from my window, without being able to extract a single moral reflection out of the sight. It wore only a chemical aspect for me, and I had, I am ashamed to say, almost a fear that the fire would be got too soon under, and that I should be cheated out of the sight of the blaze. The flames pointed our way, and the heat was unpleasantly great on our faces, when standing opposite the window. Mary indeed held herself in readiness to rush off with the phosphorus bottle if the temperature rose so much as another half degree. The Lord Provost, however, and various other good folks, of whom better might have been expected, were so delighted with playing at firemen, instead of going to church,[1] that the half degree was never

[1] The fire occurred as the congregation was assembling for morning service.

reached, and the phosphorus is safe. Some grand specimens for my lecture-table might have been got next day. But the policemen have not very elevated views of science, and would not permit the search after them. From one enlightened attaché of the corps, however, I obtained a piece of the melted lead of the roofing of the porch, and with that I suppose I must be contented.

"A longer letter next time, till which hopping you is well, which i am, affectionate brother, "GEORGE."

Instead of improving in health, his cousin James became increasingly and hopelessly ill, as extracts from letters will show. In him were united to genius of no common order, powers of tenderness and fascination that made him intensely loved by all who knew him well; so that, even after the lapse of sixteen years, his very name possesses a charm, awaking inexpressibly sweet memories.

In the following letter to a sister, allusion is made to a paper read to the Royal Society, Edinburgh, in which the results of the repetition of Dr. Brown's experiments were detailed. They may be summed up in a few words to Dr. Cairns:—"His experiments I can confirm only in the most partial way; his theory and the doctrine of transmutation (by experiment) not at all."

"*Thursday.*

'DEAR JESSIE,—My time is so entirely taken up at present with a multitude of duties, that I find it impossible to fulfil my promises.

"On Monday night all went well at the Royal Society. My paper[1] was read to a large meeting, and all the hearers were very attentive. Dr. Christison rose and complimented me, referring to the great impartiality of the paper. Dr. Abercrombie lauded it also, and from many quarters compliments were privately sent forth. Let us, therefore, be thankful, and say no more of praise, of which we had quite enough.

[1] 'Account of a Repetition of several of Dr. Samuel Brown's Processes for the Conversion of Carbon into Silicon.' By George Wilson, M.D., and John Crombie Brown, Esq.—'Trans. R. S. E.,' vol. xv., part iv.

"James is, on the whole, as well as any such sufferer can be, growing daily weaker, and wasting manifestly before our eyes, but free from acute pain, and not much distressed with sickness. Now and then, at long intervals, I have a cheering conversation on the world to come with him, and we talk of many matters quietly together. But often for days we remain beside each other, saying very little about any matter.

"I can now walk the streets alone, trusting to my stick only for support. This is a great deal, like a new life to me. Crocuses and snow-drops and hepaticas are growing old, and tulips and hyacinths flinging forth their flowers. It would sadden you to hear James dwell on the loveliness of green parks filled with violets and buttercups and spring flowers, as on things which he will never see. Where he is going he will see 'better things than these,' and these may not be wanting also. Nothing strikes me more in the Bible than the exulting calmness with which the sacred writers permit us to imagine our utmost as to the glories of heaven, and then add, 'Eye hath not seen, nor ear heard, neither have entered into the heart of man, the things which God hath prepared for them that love him.'

"I write in the laboratory at a moment hastily snatched from other duties. Excuse scrawling, and believe me your affectionate

"GEORGE."

After speaking of his baffled hopes in connexion with the experiments alluded to, which amounted in number, at the lowest estimate, to two hundred, he writes to Dr. Cairns on March 1st: —"But what are all these things, and any amount of intellectual disappointment and grief . . . compared with the sorrow of seeing my poor cousin hopelessly, fatally ill? He is dying before our eyes, and the doctors hold out no hope of amendment. Tubercular disease, phthisis (or to use the plainest word), consumption, has set its fatal seal upon him. It has not yet gone far, but you know that in that disease the beginning is the end. James knows he is dying. In a house full of invalids like ours, with the shadow of the grave always over it, great plainness of speech can be used on such a matter. He is weak in body, but little changed mentally. He speaks and reads very little,

"Meanwhile, I would give a great deal if, with these solemn thoughts around me, I could gather all my pupils, some two hundred in number, together, and address to them a word on something higher than anything chemistry can show. I would take for the lesson of the day the thirteenth chapter of 1st Corinthians, and would preach, with the emphasis on the *we*, from the words, '*We* know in part, and *we* prophesy (or teach) in part; but when that which is perfect is come, then that which is in part shall be done away.'"

The sorrows of this winter and spring in no way materially neutralized George's energies; and from each of his Classes a testimonial was presented to him expressive of their sense of the gratitude due for his services. A sentence in a letter reminds us of members of the household, without a notice of which the picture is incomplete:—"All our kith and kin are well, down to Stronach, the beloved terrier, and the absurd cat without a tail." Both these *individuals* were great favourites with George. The terrier accompanied him everywhere—to lecture-rooms; while driving; to the laboratory; to the sofa; and to bed, where he reposed at his master's feet. While he lay on the sofa at supper-time, Strony (as he was usually called) sat on his hind legs and begged for biscuits; and puss (a Manx cat) lay on his chest, and patted his mouth to coax bread out of it. Their importunities were a pleasure, as expressive of the strength of their love and trust, and his patience with them was exhaustless.

The summer session of 1844 was opened by a lecture on transmutation, which attracted much attention at the time, owing to its bearing on the new views then under discussion. Dr. Chalmers and Lord Jeffrey were amongst the auditors, and with both of them a lasting friendship was the result. The lecture was afterwards published, with some enlargement, in the 'Edinburgh New Philosophical Journal,' for July 1844, and in it the whole subject of isomeric transmutation was discussed.

His summer classes occupied three hours daily, besides laboratory duties, so that it is not surprising to find the remark, "I

am getting very tired of summer work, and longing for the country. We have as good as settled to return to our old quarters at Morningside. Two ladies, a crow, and one or two cats, are the present inhabitants of the cottage."

A month previously he had told Dr. Cairns,—"I have been baptized by immersion, having satisfied myself that it was the scriptural and most ancient method, and desiring, since I had the choice, to realize as fully as possible in the symbolical rite, the application of such passages as 'buried with Christ in baptism,' etc. But I incline strongly to consider the mode unimportant, and to believe that affusion of water is all that is implied in the idea of baptism. My mind is still quite undecided as to the question of the proper objects of the ordinance, and I look for your assistance in solving the difficult and important problem when you return." George's parents belonging to the Baptist persuasion, he had not been baptized in infancy, and therefore no choice was now left him except as to the mode. The rite was performed by the friend and pastor of his early years, the Rev. Dr. Innes, for whom he ever retained an affectionate regard. His views as to believers being the proper subjects of baptism became very decided in later years, yet with no tinge of sectarianism or bigotry, from which he was unusually free. The early admiration of the Episcopalian form of worship, above that of other religious bodies, passed away with the dreams of youth, and he united himself with the Congregational Church under the care of the Rev. Dr. W. L. Alexander, a union only dissolved by death.

Nearly two months were spent in his favourite retreat, from which we find a letter, dated "Sleepy Hollow," describing its attractions:—"This is a most sweet spot, and no day is more delightful here than Sabbath. I miss the prayers of my brethren much; the sermons far less. Here I have hosts of precentors, who lift up a stave whenever they have a mind, and I never lift staves at them. The blackbirds begin to know me, and a little bird (name unknown), on a tree above my head, sings a *Te Deum laudamus* of three notes, of which I never tire. The delight I feel in gazing at flowers and insects, and watching the trees grow, the shadows on the hills, and the

changing aspects of the sky, I shall never be able to make any one understand. I can give it no utterance in words. I am sure, however, that it is innocent, healthful, and though I am slow to use solemn words needlessly, even holy, for this garden has been to me an oratory, such as no other place has been. I spent this forenoon reading the story of Joseph and his brethren, onwards to the end of Genesis. It is long since I read it through, and though no part of the Bible is better known to me, or more tenderly remembered in connexion with happy childhood (perhaps indeed for that very reason), it moved me almost to tears. I felt the *hysterica passio*, the gulp in the throat, and should have fairly wept had I attempted to read it aloud. The dignity, simplicity, and pathos of the scene have never, I imagine, been excelled, and the wonderful way in which the old romantic story momentarily reveals God himself shaping all its events to the most important but far-distant issues, and yet leaves the human interest in the tale to go forth unchecked by the awe or even sense of the supernatural, struck me to-day as it never did before. I spent two hours, which fleeted away, in reading the account and thinking over it, ending with the grand prophecy of Jacob as to the destinies of his descendants, which always seems to me to resound like the triumphal march of an army going forth conquering and to conquer. For the blessing of Jacob on Ephraim and Manasseh I have another and a more subdued feeling. Many a time, when I was a child, and in early youth, has mother invoked on my head and my twin-brother's, as we slept together, the benediction,—'The Angel which redeemed me from all evil, bless the lads.' That prayer has been answered in full for one of them, who bade me farewell some twelve years ago, in assured hope of a blessed resurrection, and the other rejoices to know that he is the child of many prayers."

A pleasant week, at the close of the holidays, was spent at a farm-house in East Lothian, where he "made the acquaintance of a great many nice dogs," and was touched to learn that his own terrier took his absence sorely to heart, and refused food. "Give the dear beast," he writes, "a taste of cream, or something good, in reward thereof;" and so back to town and to work.

CHAPTER VIII.

LECTURER AND AUTHOR.

"Nullum quod tetigit non ornavit."

"He illuminated the Book of Nature as they did the Missals of old."

IN the ten years that follow, we find the most important part of George Wilson's life, so far as literary work is concerned. The amount done seems more befitting one strong in body, than the invalid on whose behalf our sympathies have been excited. But one secret of his unresting diligence lay in the belief that his life would be a short one. "Don't be surprised," he said to a friend in 1845, "if any morning at breakfast you hear I am gone." So with the shadow of death close at hand, he ever worked as one whose days were numbered. At first this seems a gloomy thought, but that to him it was far otherwise we cannot doubt. "To none," he says, "is life so sweet as to those who have lost all fear to die."[1] They who have large store of health and strength are apt to lavish them thoughtlessly on various objects, but such as he, husbanding their strength for work alone, are frequently able to realize what their stronger brethren only dream of.

From this period to its close, his life was one long sacrifice of pleasure to duty. While lecturing ten, eleven, or more hours weekly, sometimes with pulse at 150°, it was frequently with torturing setons and open blister wounds; and every holiday was eagerly seized for the application of similar "heroic remedies," or "bosom friends," as he named them.

[1] 'Life of John Reid,' p. 264.

His keen appreciation of the pleasures of society, and of all beautiful things, was sternly put aside to meet professional claims; and all with such quiet simplicity or gay good humour, that few if any guessed the price at which his work was accomplished. "I should have been to see you," a note says, "but a cold has damaged my bellows a little, and I have had to put a *comforter* on the *chest* in which they are kept." And before the opening of a winter session, he writes to a fellow invalid, "I'll wager you'll get through the winter with less croaking than I will. I was wondering this morning, as I looked at my collar bones, how soon they would have a blister occupying the valley below. You have not like me to turn 'stump orator' for six months in the year; and talk, talk, talk till your tongue cleaves to the roof of your mouth; however, I hope we'll both fare well. To be well enough to work is sufficient, and quite satisfies me." "One whole day in seven spent in talking out loud," he says again, "makes that prophecy comforting, 'Whether there be tongues, they shall cease.'"

Besides the systematic course of lectures, given each session to his several classes, there were occasional series of popular lectures. The greater number of these were delivered before the Philosophical Institution,[1] Edinburgh, with increasing acceptance on each occasion. The subject of the first course was, "The Chemistry of the Gases," and part of the Introductory Lecture appeared shortly afterwards in a periodical of the day, with the title, "The alleged Antagonism between Poetry and Chemistry."[2] Professor Goodsir at the same time gave a short popular course on Human Physiology,—he and George Wilson lecturing alternately. It was on one of these chemical evenings that the pet terrier made his last appearance at a lecture. Stronach having died and left a blank in the household, Alexander Russell brought a successor, that in due time became as great a favourite, and, like Stronach, accompanied his master everywhere. He was named Grim, and one evening in the Waterloo Rooms, he astonished the attentive audience by push-

[1] The title, in its earlier years, was "Philosophical Association," and the lectures were delivered in the Waterloo Rooms.

[2] See 'Torch,' pp. 13-16. Sutherland and Knox, Edinburgh, 1846.

ing aside the green baize hanging from the table, and with shaggy head and paws visible, gazed with wonder at the assembly before him. The effect was irresistibly comic, for it seemed as if, in imitation of his master, he had thoughts of setting up on his own account. But poor Grim never had another chance of winning public confidence, being compelled henceforth to spend the evenings at home, listening for the step of him he loved so well.

Within the decade now under notice, several courses of lectures were delivered under the auspices of the same Institution. The prelections usually delivered to its members differ widely from those addressed to most popular assemblies. The audience which it calls forth regularly throughout each winter, is one that might stimulate any lecturer to put forth his best powers. The highest efforts of such men as Ruskin, Kingsley, Hugh Miller, and many of like eminence, have been elicited by it, and not a few works of value have resulted from the publication of lectures given either in whole, or in part, to the members of this Institution. A favourite lecturer, such as George Wilson proved to be pre-eminently, is sure to attract a large number of intelligent, educated, and critically appreciative listeners. To address audiences so intelligent and so courteous was a source of gratification, affording an arena on which his powers had wider scope than the limits of his ordinary field could give.

Few can estimate the amount of forethought and trouble which a popular scientific lecture, illustrated by experiments, entails: but so far was Dr. Wilson from grudging this trouble, that he invariably prepared for each evening, and with the greatest care, more than could be delivered, and received convincing proofs of appreciation in the unwavering attention of his hearers, even sometimes for an hour and three-quarters. An hour before he began seats were eagerly secured by them, and from half-past seven till ten have they frequently been in attendance, night after night. To him these lectures involved loss of sleep and appetite, such as made them the most injurious to health of all his labours. A list before us of fifty-two items, required for the illustrating experimentally of one lecture, testifies to these facts, while the more elaborate of his prelections

were, one might soberly say, so much of his very life told out. Almost invariably were they followed by sharp illnesses, yet not the less was he willing to undertake the duty again and again. With truthful reverence we may apply to him the prophet's experience, "His word was in my heart as a burning fire shut up in my bones; I was weary with forbearing, and I could not stay."

After his death the following reference to a published lecture was given in writing to his sister: "While glancing at the paper, I remembered the very sound of many of the expressions as I heard them, and how vividly I can recall his look while lecturing those times I went with you, and the great clear profile cast on the wall by the electric light! All the brilliance and the beauty of the mind, with its thoughts, we can't, in looking back, feel *them* past; only the cough after he got into the carriage—oh, Jessie! what a contrast it made at the time, and now, that part is over for ever." One of our gifted men of letters, Dr. W. B. Hodgson, in a letter of January 1860, speaks of the "element of childlike wonder which animated George Wilson, and which he so well knew how to transfuse into others, or rather, which he transfused into others without knowing how, and by the mere force of sympathy. In listening to Wilson, you not only increased your knowledge, your store of facts, but you were delighted with the beauty and harmony of their relations and interdependence; and few indeed are the sermons that can leave so deep an impression of reverence for Him whose works science interprets, as did the simplest of George Wilson's compositions. There was such a charming play of fancy about his lectures, adorning but never obscuring the accuracy of his observations, or the close method of his arrangement. . . . He was one of the most learned of our men of science, at once the most practical and the most poetical, the most attractive lecturer and effective teacher; and never did a purer, gentler, kindlier being exist in human shape."

"In his hands," Professor Macdougall[1] remarks, "every subject was felt to become not intelligible only, or even interesting, but almost enchanting. The value and attractions of know-

[1] Professor of Moral Philosophy in the University of Edinburgh.

ledge were not merely understood, but intimately felt and appreciated, when exemplified in the joyous activity and happy dispositions of one, who drew so evidently and so largely from knowledge the aliment of his energies, and the materials of varied and exquisite enjoyment."

In the spring of 1846, he was requested by the Young Men's Society to give a short course of lectures on the "Relation of Physical Science to the doctrines mooted in the Vestiges of the Natural History of Creation," in order to counteract the views promulgated in that work. Speaking of those lectures, he says to Dr. Cairns, in a letter of July 11, 1846, "I have too much wrought only at science and literature, hoping thereby to secure a position which would enable me to serve Christ effectually. But many things warn me that my life will be a short one, and that what I can do, must be done swiftly. Here there seems some slight opportunity of doing a little good, and I must not willingly let it pass, or mar it." The lectures were largely attended, and attracted considerable notice at the time. Offers were made by six publishing houses to print them without delay. He felt averse, however, to their appearing permanently in the polemical form, and put them aside to be reproduced at a time of leisure, which never came. The severe illness, indeed, induced by the additional labour they gave, made some months of quiet rest in the country indispensable, and fresh literary work pressing in on him soon absorbed every leisure moment.

Occasional lectures in provincial towns were delivered, the number of such requests being truly legion. Of one in Dunbar, in 1846, he says, "From what I saw of the people who attended it, I am satisfied that single lectures are out of the question to miscellaneous audiences, so far as rational instruction is concerned; nor is it possible to offer a prelection which shall be equally suitable to little boys, young ladies, elderly ditto, clergymen, doctors, farmers, tradesmen, and working people. The thing is preposterous. The utmost that I believe is, that the lecture would do them no harm."

To no appeals for aid was a more ready assent given than to those from struggling home-mission workers, Sunday or apprentice schools, etc.; and the careful arrangement of illustrations

for these lectures compelled the thought that this was work specially done for the unseen Master. The last of these appearances in the summer of 1859, is now thought of with the interest that clings to such unconscious farewells. To Dr. Cairns he sent the following report of it:—"A few nights ago the young women at it [a Bible class] were invited to a festival, where tea, strawberries, and a lecture on light, got up, 'regardless of expense,' with specimens, balloons, blue lights, and what not, were furnished. A well-known 'Prestidigitateur' took charge of the 'spectacle,' and the whole affair was a great success. Some liked the tea, and some the pictures: some the strawberries, and some the balloon. A few 'general hearers' liked everything. . . . . I took more trouble with the *fête* than I have done with almost anything, and rejoiced much in its successfulness. May the omen be blessed! May He, for whose sake the work was done to interest the little ones of His flock, feed me and lead me as one of His sheep once far astray, but now admitted by the door into the true fold!"

In 1852 he speaks of a similar occasion to his friend Mr. Charles Tomlinson. "I am much interested in your Vauxhall doings.[1] I know how pleasant such work is. I had more pleasure in two lectures (on the Chemistry of a Candle), to two ragged schools this winter than in most of my other lectures. At one of them a very excellent dissenting minister,[2] who is the mainspring of a most beneficent system, came up to me before the lecture commenced, and said apologetically, 'We generally begin with prayer; have you any objection to our doing so now?' I at once said, 'No;' and he offered up (what Scotch prayers on *such* occasions are not always) a brief, expressive, singularly appropriate prayer, in which he prayed for me *as a chemist*. I cannot tell you how I was touched. I said in my secret heart, 'I'll give him another lecture for that.' We chemists are generally held to be men who, provided we can tell ink from blacking when asked, do not require moral char-

[1] The reference here is to a lecture given by Mr. Tomlinson, to supplement the benevolent labours of the Messrs. Wilson, in the Belmont Candle Works, on behalf of those employed by them.

[2] The Rev. James Trench. See Cairns's 'Memoir of John Brown, D.D.,' p. 262.

acters. No doubt, we get our share of the prayers for all sorts and conditions of men, but I want something more. The day I hope will come when, without cant, or formality, or hypocrisy, a class and its teacher will together ask God's blessing on their work before they begin. If we can't be Christians in all our daily work, of what worth is our Christianity?" It may be imagined what excitement such a lecture occasioned amongst the inhabitants of the close or wynd in the High Street of Edinburgh, in which it was held. Going down on one of the evenings, an hour previous to the opening of the door, to make preliminary arrangements, the lecturer found little boys endeavouring with intense curiosity to peep through every crevice of door or window. Seeing him enter elicited from one the pathetic petition, "Eh, man! will ye no let us in?" but a more shrewd companion observed, "That's no a man; that's a gentleman!" In due time they did get in, and next day were overheard by the assistants who came to remove the apparatus used, dilating to their companions at the mouth of the close, on the wonders they had seen. "And man!" said one, "he fired a glass pistol fu' o' naething; an' he set up a balloon, an' they were a' haddin' on t' it!!!" The description of the explosion George ever remembered with keen zest.

The notes of this lecture may be given as a specimen of those from which he usually spoke, only a very few lectures being fully written out. Special words and marks were written in red ink, to catch the eye.

CHEMISTRY OF A CANDLE.

I. Methods of producing Heat and Light. *Wood: Coal: Candles: Lamps: Spirits.*

Gas.

II. Apparently very different; essentially same.
  a. All contain *charcoal:* leave it when heated.
  b. Give off *inflammable air* or *H.*
  c. Turn into vapour when heated.

III. Cinder, or coke, or charcoal-fire glows, but does not flame.

IV. We must make them change into vapours or airs, or "gases," *geist, ghaist, ghost, spirit.*
  a. *Coal* heated in iron bottle (retort).
  b. *Oil* placed in vessel with *wick.*
  c. *Candle* with wick but no vessel.
V. Use of *wick* to draw up melted wax.
  a. Illustrations of capillary action.

Sugar.

VI. *a.* Long time candle takes to light.
  b. Longer even than lamp.
VII. Tallow or wax melted and turned into gas. A candle a little oil manufactory, and also a little gas-work.
VIII. Thus lamp-light, candle-light, and oil or coal-gas light, and wood and coal-flame, all essentially the same—all gas-lights; ONLY coal and wood continue to yield *heat,* long after they cease to give flame.

I. *a.* Proof that these vapours or gases contain H.
  b. Proof that they contain C: *smoke:* Cl. and $C_4 H_4$.
II. This one half of subject: *need of air.*
III. Air *feeds* flame or *supports* it.

Candle in air.

IV. Composition of Air.
  a. $\frac{1}{5}$th *pure, vital,* or oxygen. *Stick and Candle.*
  b. $\frac{4}{5}$ths *non vital,* nitrogen.
V. Burning, a uniting of C H with O.
  Illustration from blue and yellow = green.
VI. What they produce when combined?
  a. Water. *Oxyhydrogen blowpipe* heat.
  b. Carbonic acid. Cause of light: *Limeball.*
  c. Its flame-extinguishing, deadly properties.
VII. Proof of God's wisdom in giving us C and H and air as combustibles.
  S in O *suffocating and poisonous.*
  Fe in O *white, hot and fusible.*
  P in O *acid and irrespirable.*
VIII. HO and CO_2 gases, volatile, invisible
  Importance of ventilation.

REFERENCES IN THE BIBLE TO CANDLE OR LAMP.

1. The candle of the wicked soon put out.
2. The candle of the Lord. "Oh that I were as in months past, as in the days when God preserved me; when his candle shined upon my head, and when by his light I walked through darkness."
3. The golden candlestick of the Hebrew Temple.
4. The seven gold candlesticks of the New Testament.
5. In heaven "they need no candle." "The Lamb is the light thereof." "Light is sown for the righteous."

"Perfect in all the courtesies of society, and able to delight the most refined circles with his exquisite wit and knowledge, he could turn with still greater relish to correspond with children, or to enjoy the wonder of some ragged city-mission audience at a voluntary scientific lecture."[1]

Many and various were the contributions to science during the years of which we speak. A detailed estimate of the greater number of them will be found in the Appendix, from the pen of Dr. J. H. Gladstone. To one of the first,—'On a simple mode of constructing Skeleton Models to illustrate the systems of Crystallography,' the Royal Scottish Society of Arts awarded a medal of five guineas' value, believing the invention likely to be of much service. Before the same Society a paper was read in 1845, 'On the employment of Oxygen as a means of Resuscitation in Asphyxia.' In 1848 he brought before it Suggestions on the use of the Electro-Magnetic Bell in conducting Sound; and in later years, 1853 and 1854, his series of Researches on Colour-Blindness, for which the Society conferred on him the highest honour, the Keith prize, value £30; and in addition a grant of money, to be expended on the inquiry, was placed at his disposal. In 1855 the Researches were published,[2] with some additions, and form a valuable contribution to previous in-

[1] 'Macmillan's Magazine,' January 1860.

[2] 'Researches on Colour-Blindness, with a Supplement on the Danger attending the present System of Railway and Marine Coloured Signals.' Sutherland and Knox, Edinburgh.

vestigations on this subject. None of his inquiries attracted so much attention as these, probably from their bearing so widely on the welfare of the public. They are referred to with commendation by Dr. W. C. Henry, in his 'Life of Dalton;'[1] by Professor Clerk Maxwell, of Aberdeen;[2] by Professor Tyndall, of the Royal Institution, London;[3] by W. Pole, Esq., C.E.;[4] and by Dr. J. H. Gladstone.[5] Sir David Brewster, in a recent paper on Colour-Blindness, speaks of the Researches as a "very interesting volume." It is thus more fully referred to in an elaborate article, discussing its contents, in the 'North British Review' for 1856: "Although Dr. Wilson himself modestly regards his work 'only as an imperfect contribution to the history of a remarkable, and by no means rare peculiarity of vision, requiring for its full elucidation a profounder acquaintance with optics, anatomy, and physiology, than he dared pretend to,' yet we have no hesitation in recommending it to readers of all classes as a popular work of great value, exhibiting no deficiency of optical, anatomical, and physiological knowledge, analysing faithfully, and criticising candidly, the labours and views of preceding writers, and calculated, as he himself trusts, 'to create, or deepen the conviction that the study of colour-blindness will throw light upon intricate departments of scientific optics, anatomy, and physiology,' whilst it has 'already an important bearing on the æsthetic arts, which express beauty by colours, and on those economic arts, such as mapping, but especially signalling, in which colours are graphically employed.' . . Though Dr. Wilson has already taken a high place among the distinguished men who adorn the colleges of our northern metropolis, his work on colour-blindness will add greatly to his reputation."[6]

Professor Cherriman[7] also reviews this work at great length in the 'Canadian Journal' for March 1856, and concludes

[1] See Appendix to 'Life of Dalton,' by Henry.
[2] 'Trans. R. S. E.,' vol. xxi. p. 284.
[3] 'London and Edinr. Phil. Mag.' vol. xi. p. 329.
[4] 'Trans. R. S. for 1859,' p. 323.
[5] 'Report of Brit. Assoc. for 1860.'
[6] 'North British Review,' February 1856, pp. 327, 328.
[7] Professor of Natural Philosophy, University College, Toronto.

"with hearty thanks to Dr. Wilson, both for his own experiments and researches in this obscure subject, and for having embodied all that is known about it in a clear and concise *résumé*, which will serve as a standard of reference hereafter to the scientific investigator."

In September 1857, an ophthalmological congress was held at Brussels, attended by men of eminence from all parts of the world, and it was confided to Mr. White Cooper, of London, to draw up a report on the present state of ophthalmic science in England. So deeply impressed was he with Dr. Wilson's work, that he expressed his opinion of its value in the following terms :—"Though I have abstained from making special reference to books, I cannot pass over the admirable and original work on chromato-pseudopsis, or colour-blindness, by Dr. George Wilson, of Edinburgh. For acuteness and originality this volume deserves the highest praise." The opinion thus expressed was indorsed by all present who had studied the subject. Mr. White Cooper has kindly given in detail his estimate of this work as follows :—"In 1853, the attention of Dr. George Wilson was directed to the obscure but interesting subject of colour-blindness; he did not originally intend to do more than write two or three papers upon it, but as examples of colour-blindness multiplied on his hands, and (as he states) the theoretical and practical importance of many of the questions connected with its occurrence became more apparent, he was led to study it more deeply, and to write upon it at greater length.

"A prominent feature in Dr. Wilson's character appears to have been a desire to *utilise* any subject, to remove it from the realms of speculation, and to turn it when possible to practical account. Thus, as to colour-blindness, until he took up the subject, it had been regarded merely as a curious physiological fact, the phenomena and their explanation having mainly attracted the attention of philosophers. But Dr. Wilson regarded it from another point of view; he saw its practical relation to railway and ship signals, and the important results which might flow from the inability to distinguish one colour from another.

"His first communication appeared in the 'Edinburgh Monthly Journal of Medical Science' for November 1853, with

the title, 'On the prevalence of Chromato-pseudopsis, or Colour-blindness;' but as the practical relations of colour-blindness could not be fully discussed in this professional periodical, Dr. Wilson communicated to the Royal Scottish Society of Arts an important paper 'On Railway and Ship Signals in relation to Colour-blindness.' This communication was read January 8, 1855, and it speaks well for the liberality, not less than the discernment of this distinguished Society, that, being deeply impressed with the importance of the facts stated by Dr. Wilson, they circulated at their own expense, copies of the paper among the railway companies, and, unsolicited, placed at Dr. Wilson's disposal a grant of money to be expended on the inquiry.

"The lights selected by the Admiralty to be carried by sea-going vessels to prevent collision, are *green* on the starboard side; *red* on the port side. Now these are the colours most liable to be confounded by the colour-blind; and a very singular fact came to the knowledge of Dr. Wilson in the course of his inquiries: of a Board amongst whose duties was that of investigating the use of coloured lights as signals, it chanced that of five members, two were colour-blind; and one day a clerk—unconscious of his defect—copied a letter in *red* ink, thinking it was black!

"Red and green are well known to railway travellers, as indicating, red, *danger*—green, simply *caution*. Thus, both by sea and by land, these, the colours most frequently confounded by the colour-blind, are the very colours selected as important signals! Yet how essential to safety is their due appreciation!

"Dr. Wilson enters at great length into the consideration of the question in all its bearings, and points out the necessity of signal-men being tested as to their appreciation of colour, describing minutely the course to be pursued, which would certainly lead to the detection of those deficient in this qualification; and as an additional measure of precaution, Dr. Wilson dwells on the necessity of employing the elements of *form* and *number*, as well as *colour*, in railway signals.

"Though less generally adopted than could be desired, these suggestions have not fallen barren to the ground. Dr. Brinton, who examines candidates for railway appointments in India,

lays stress on their due appreciation of colour, testing them as recommended by Dr. Wilson; and there is little doubt that, as the importance of the subject is more generally recognised, it will receive the attention it merits. In navigation, Dr. Wilson urges the employment of night signals which the colour-blind cannot mistake, the Admiralty system being fraught with unsuspected danger to all who trust in it.

"As facts accumulated, the interest of the subject presented itself more and more forcibly, and Dr. Wilson felt, in 1855, that the time had arrived when the results of his researches should be presented to the profession and the public. An extended analysis of this work would be out of place in a biography, and it will be sufficient to mention some of its leading points.

"The first thing that strikes us is the amount of labour bestowed upon the inquiry; in 1852-53 alone, Dr. Wilson carefully examined 1154 persons with reference to colour-blindness, and subsequently a further large number; it may be confidently asserted that no one had previously extended the investigation so widely, and the results are commensurate.

"It is somewhat startling to find that Dr. Wilson arrived at the conclusion, that one in every twenty persons has an imperfect appreciation of colour, and that the number who are colour-blind in so marked a degree as to mistake red for green, brown for green, and occasionally even red for black, is one in fifty. Dr. Wilson's researches fully established the hereditary character of colour-blindness, which clings in a remarkable degree to certain families; he observed, that so far as *tints* are concerned, the colour-blind have as nice discernment as others; it is proper to mention that Sir John Herschel and others entertain doubts as to whether colour-blindness is really as common as stated by Dr. Wilson; the question may be regarded as yet open.[1] To a person with perfect vision it is startling, and almost verges on the ludicrous, to see another apparently equally gifted, gravely sorting scarlet and red and green worsteds as shades of one and the same colour; declaring that a stick of red sealing-wax was not to be distinguished on

[1] See 'Statistics of Colour-Blindness' in 'Report of the British Association for 1859,' p. 228.

a grass plot; or writing a letter in brilliant *red* ink, thinking it was rather a bright black. The examples of such strange confusion, related by Dr. Wilson, are very numerous, and render the book as amusing as it is interesting.

"As art can do little towards palliating, and nothing towards curing colour-blindness, Dr. Wilson points out the propriety of excluding from certain professions and callings those who have this defect. The professions for which it most seriously disqualifies are those of the sailor and railway servant, who have daily to peril life and property on the indication which a coloured flag or a lamp seems to give. Though an imperfect apprehension of colour must prevent a man becoming a painter, it does not exclude his excelling as an engraver, for the colour-blind have a keen eye for form, outline, light and shade, etc. Such callings as the weaver, house-painter, dyer, etc., are manifestly ill adapted for them; and even the pursuits of the analytical chemist, to whom a knowledge of colour is important, scarcely falls within their list.

"On what does colour-blindness depend? A variety of opinions exist on this point; but we shall conclude the subject by quoting that formed by Dr. Wilson:—'We seem to be fully entitled to affirm that the cerebro-retinal apparatus of vision in the colour-blind is, either through congenital defect or subsequent morbid change, unendowed with that sensitiveness to calorific impressions which it possesses in those whose vision is normal. It is probably the retina that is the chief seat of this diminished sensibility to colour, and the simpler form of colour-blindness might fitly enough be called *colour amaurosis*.'"[1]

From 1846 onwards to 1852, a series of researches on Fluorine was carried on, involving much patient investigation and laborious inquiry. Its presence was discovered in waters, in minerals, fossil remains, plants, and animal secretions. In the

1 'Researches on Colour-Blindness,' p. 111.

In the 'Cosmos' for January 6, 1860, M. l'Abbé Moigno expresses surprise that no notice is taken in these 'Researches' of labours of his in the same field, published in the 'Répertoire d'Optique Moderne,' and consisting of a practical and theoretical *résumé* on Daltonism or Colour-Blindness. Had this paper come under Dr. Wilson's observation there can be no doubt he would have mentioned any obligation under which it might have placed him.

English translation of 'Lehmann's Physiological Chemistry,' by Professor G. E. Day, special reference is made to them.[1] With one or two exceptions, the papers containing a record of those investigations were brought before the Royal Society, Edinburgh, and have a place in its Transactions.[2] The last notice of the subject was one claiming priority, because of a communication made to the French Academy in 1856, by M. J. Nicklés, entitled 'Présence du Fluor dans le Sang,' this gentleman being unaware, apparently, of Dr. Wilson's announcement of the same fact in 1850.

Before the Royal Society of Edinburgh were also brought, in 1848, the results of eight months' inquiry into the bleaching powers of certain gases; and in the following year the 'Early History of the Air-Pump in England.' In 1845, he read also here, 'On Wollaston's Argument from the Limitation of the Atmosphere, as to the Finite Divisibility of Matter;' later, 'On the Organs in which Lead accumulates in the Horse, in cases of slow poisoning by that metal;' and in 1850, 'On the possible Derivation of the Diamond from Graphite and Anthracite;'[3] while on another occasion he brought forward attempts to trace the source of Nitrogen in Plants.

Phenomena of vision, encountered while prosecuting the researches in colour-blindness, led to observations 'On the Extent to which the received Theory of Vision requires us to regard the eye as a Camera Obscura,' which may be consulted with advantage by those interested in physiological pursuits. It bears the impress of that careful thought and accurate reasoning which characterize all his writings. Of one or two other papers presented to the Royal Society, Edinburgh, notice will be found elsewhere.[4]

Before the Chemical Society of London were brought 'Inquiries into the Decomposition of Water by Platinum;' the 'Binary Theory of Salts;' and 'Some Phenomena of Capillary Attraction.'

Besides the more strictly scientific labours, of which some

[1] Vol. i. p. 425.—*Cav. Soc.* Published 1852.
[2] A list of them will be found in the Appendix.
[3] See Appendix.
[4] See Appendix.

notice has been given, he found time to draw up a series of essays for the 'British Quarterly Review,' between 1845 and 1849, which have justly been reckoned as successful as anything he ever wrote. "The paper on Chemistry and Natural Theology boldly grapples with the difficulty arising from the presence of evil as well as good in the manifestations of design, and contains a vivid reflection of his own experience of suffering; while the scientific memoirs on Dalton, Cavendish, Black, Priestley, Wollaston, and Boyle, show a range of reading and a power of elucidation not often combined in the treatment of any science."[1] After reading some of them, Lord Jeffrey wrote to a friend, saying, "They give me a very high opinion, not only of Dr. Wilson's talents and learning, but of his taste and power of writing. . . . His severer style is admirable, and nothing can be better than the lucid and energetic brevity with which he abstracts facts and condenses arguments." Those papers were the first expression of that love for biography, afterwards so manifest. "My own favourite study, I will confess," he tells the Rev. Dr. Vaughan, editor of the Review, "is scientific history and biography." He had it in contemplation to write the lives of the distinguished chemists of Britain, and of this work these memoirs were to form part; but the design was never fulfilled, his plans being always more extended than his opportunities of carrying them out. The nucleus of another of his bright visions is to be found in the paper on Chemistry and Natural Theology. The hope of writing a 'Religio Chemici,' corresponding to Sir Thomas Browne's 'Religio Medici,' was indulged for many years; but "his life—bright with rare virtues—was the only 'Religio Chemici' given him to finish. This was higher than the contemplated work."[2] The 'British Quarterly Review' was struggling into being when he was requested to contribute to its pages. This organ being the representative of the Congregationalists of Great Britain, he willingly responded, and by his zeal on its behalf, as well as by his articles, he contributed not a little to its success, identifying himself thoroughly with its wellbeing.

In the notices called forth by the appearance of its first num-

[1] 'Macmillan's Magazine,' January 1860. [2] Ibid.

bers, we find his paper on Dalton specially mentioned. "The scientific strength of the Review is indicated by a truly admirable paper on the 'Life and Discoveries of Dalton,' in which the atomic theory of that great lawgiver of quantitative chemistry is expounded with a clearness, precision, width of view, and philosophic eloquence, which reminds us of Playfair, and in which the whole question of Dalton's merit as a discoverer is, through original research, placed in a new point of view, by tracing the independent and altogether peculiar course of inquiry by which he was led to his atomic hypothesis." "'The Life and Discoveries of Dalton,' one of the greatest of English chemists, is treated with a learned appreciation of the subject. It is one of those delightful essays which serve to open the lights of science upon the uninitiated, without dazzling them, or deterring them with too abstruse details."

His 'Text-Book of Chemistry,' which forms one of the volumes of 'Chambers's Educational Course,' was written to dictation in the summer of 1849, in the "Sleepy Hollow" of Morningside. Rheumatism was an unfailing visitor in summer, frequently affecting the arms to a painful extent. In that year it compelled the abandonment of spring classes, and this text-book was undertaken as the only work of which he was capable at the time, idleness being to him an impossibility. He was quite unable to hold a pen for months, and dictated its pages to a sister while pacing the room with compressed lips, that showed the pain could scarcely be endured; but pain never stopped work, and the success of the book has been such as to repay the effort abundantly. Its sale has been at the rate of 2,500 copies yearly, and upwards of 24,000 copies, in all, have been sold in the nine years which have followed its publication. It has been recommended by the Council of the Society of Arts, London, to the students preparing for examination for its certificate of proficiency, and has met with general acceptance. It is thus noticed in periodicals of the day: "There are few books on chemical science in our language which so fully explain its leading features. . . . His little work may be studied as a choice example of scientific literature."[1]

[1] 'Athenæum,' January 4, 1851.

"Dr. Wilson's work is intended as a simple introduction to chemistry for the youth of both sexes; but it deserves a higher place than the author claims for it, from the excellence of the spirit in which it is written. Most works of the class attempt to do no more than to give an account of the strange and striking phenomena of the science, and rarely venture to discuss its principles; but Dr. Wilson has entered with considerable fulness, and in a remarkably clear, simple, and intelligible manner, into the general doctrines of chemistry, and has explained many matters which are generally, but as we believe erroneously, considered too abstruse for the popular student."[1] A second edition was desired by the publishers in 1857, but engagements on hand put it out of his power to give attention to this request, as considerable additions would have been necessary, owing to the progress of chemistry since its first appearance.

In 1851, the growing reputation of Dr. Wilson, both as a scientific writer and a biographer, was greatly enhanced by his 'Life of the Honourable Henry Cavendish.'[2] Eight years previously, while laid aside from active work, he had begun to collect materials for the Lives of British Chemists, already alluded to, and these were found of service in this arduous undertaking. He had also had unusual opportunities of mastering the difficulties connected with the discovery of the composition of water, and the claims of Watt and Cavendish in respect to it. It was at the request of the council of the Cavendish Society—which includes nearly all the chemists of the country, and many of its natural philosophers—that Dr. Wilson undertook this biography, and how thoroughly he identified himself with the subject of his memoir, we find from a letter written while engaged in the work: "I read all biographies with intense interest. Even a man without a heart, like Cavendish, I think about, and read about, and dream about, and picture to myself in all possible ways, till he grows into a living being beside me, and I put my feet into his shoes, and become

[1] 'Edin. Monthly Medical Journal,' December 1850.

[2] 'The Life of the Honourable Henry Cavendish, including abstracts of his more ⁻tant scientific Papers, and a Critical Inquiry into the Claims of all the al- ⁾iscoverers of the Composition of Water.' London: Printed for the Caven- 'ety, 1851.

for the time Cavendish, and think as he thought, and do as he did." It was no light task he had undertaken, and at its close his feeling was, "Had I foreseen the labour and time it was destined to occupy, I should have declined it. A burden is now off my shoulders, which has lain on them for some two years. I never wrote anything with less freedom and unction than this book, for reasons which the preface will explain. Much of it has been dictated even in my laboratory, in the midst of confusion, and the style is horribly rough and rugged in many places. The book will be a very *dry* one, in spite of all the water in it. I look upon the whole with a remorseful conviction, that I cannot answer to God for the expenditure of so great an amount of time and thought on so small a matter. To me, however, the past is always bleak and dark."

Spontaneous help was unexpectedly received from Mr. Charles Tomlinson, London, who furnished many of those graphic details that make this remarkable man stand out vividly from his fellows. The friendship thus originated with Mr. Tomlinson proved deep and lasting. The long-debated question of priority as to the discovery of the composition of water, seems by this volume to have been decided by public consent in favour of Cavendish. Any lingering doubt was met by Dr. Wilson in a communication to the Royal Society in 1859, in which he says,—"From De Luc's 'Idées,' all trace of charge against the fair dealing of Cavendish has vanished. Lavoisier is found making full, if somewhat tardy, amends for any wrong he did the English philosopher; and as De Luc and Lavoisier testify that Cavendish had reached his famous discovery in 1782, the most uncharitable must cease suspecting that he borrowed or stole it from Watt, who had it not to offer any one till 1783."[1]

The book as a whole has met with a hearty welcome; it has been spoken of thus:—"Admirable as a biography—full of life, of picturesque touches, and of realization of the man and of his times; and, moreover, thoroughly scientific—containing, among other discussions, by far the best account of the great water controversy from the Cavendish point of view."[2] It received

[1] Published in the 'Athenæum' of April 30, 1859.
[2] 'Horæ Subsecivæ.' Second Series, p. 107.

public commendation in the address delivered to the British Association in 1855, by its President the Duke of Argyll, and is repeatedly quoted and referred to by Professor J. D. Forbes, in his 'Dissertation on the Progress of Mathematical and Physical Science since 1775 to 1850.' He speaks of it as "a valuable biography, which has been printed in the series of publications of the 'Cavendish Society,' and thus unfortunately has had but a limited circulation."[1] For further notice of this work, the reader is referred to the periodicals whose names are given below.[2]

The work which next proceeded from the pen of "the much-loved biographer," as George Wilson has been called, was as different from its predecessor as two books could well be. This difference, however, existed only in the subjects of memoir, not in the method of treating them. Approaching the man in both cases without preconceived notions of what he ought to be, and discovering with fine instinct the springs of action in each, he, with reverential faithfulness and exquisite delicacy, portrayed him as he existed.

Dr. John Reid, of whose 'Life' we now speak, was little known beyond the professional circles in which his physiological researches were highly valued, until the later years of his life,—"comprising more tragical incidents, and exhibiting finer efforts of heroism, than are often to be found in real or invented tragedies,"—revealed to the world the qualities of heart and mind that made him a wonder to many. Though not an intimate friend, George Wilson enjoyed the pleasure of John Reid's acquaintance, and on his funeral day, when visiting the picturesque churchyard which surrounds the venerable ruins of St. Andrews Cathedral, tender reminiscences shaped themselves into the following lines :—

THE LATE DR. JOHN REID.

DEATH has at length released thee,
Thou brave and patient one!
The unutterable pangs are past,
And all thy work is done.

[1] Only members of the Society named are entitled to its publications.

[2] 'British and Foreign Medico-Chirurgical Review,' April 1852, p. 533. 'North British Review,' Feb. 1856. In Littell's 'Living Age,' No. 384,—a Boston, U. S. publication,- a notice of some length is reprinted from the 'Spectator.'

Thou wert a Daily Lesson
Of Courage, Hope, and Faith;
We wondered at thee living,
And envy thee thy death.

Thou hast gone up to Heaven
All glad and painless now;
The long-worn look of anguish
Has left thy noble brow.

Thou wert so meek and reverent,
So resolute of will,
So bold to bear the uttermost,
And yet so calm and still.

We think of thee with sorrow,
Thy sad untimely end;
We speak of thee with pity,
Our sore-tried suffering friend:—

We cheat ourselves with idle words,
We are the poor ones here;
Sorrow and Sin and Suffering still
Surround our steps with fear.

Our life is yet before us,—
The bitter cup of woe,
How deep it is, which each must drink,
No one of us doth know.

The Shadow of the Valley,
Whose gateway is the tomb,
Spreads backwards over all of us
Its curtain cloud of gloom.

Some stand but at the inlet,
And some have passed within,
O'er all the shadow hourly creeps,
And we move farther in.

Thou art beyond the shadow;
Why should we weep for thee?
That thou from Care, and Pain, and Death,
Art set for ever free.

Well may we cease to sorrow;
Or, if we weep at all,
Not for thy fate, but for our own,
Our bitter tears should fall.

'Twere better still to follow on
The path that thou hast trod,
The path thy Saviour trod before,
That led thee up to God.

These were printed shortly after in the 'Monthly Journal of Medicine,' for September 1849, and by their truthful beauty impressed many of Dr. Reid's friends with the conviction that

to their author alone could the preparation of a fit memorial of him be intrusted. With what feelings he responded to their urgent solicitations, we learn from various letters of that period. "I can sincerely say that I have no personal end in view in undertaking the sketch. My hands are full of work, and only the hope of preserving a most estimable man's memory from untimely oblivion, and his character from misconception, would induce me to engage in the task. His death and latter days were believed to have made a profound impression on the profession, one such as no death in my remembrance has made on medical men." "His life was so completely one into which hundreds of medical men can enter, and the example of which, they cannot refuse as lying above and beyond their sympathies, that it commended itself to me as peculiarly deserving to be recorded." The great matter to be illustrated is, "the eminent Christian example which Dr. Reid's later days afforded to all men, but especially his professional brethren, who so much need to be reminded of the claims of Christianity upon them. To dwell upon this would be to myself a labour of love. It has fallen to my own lot to sit by the sickbeds and deathbeds of many near relations and friends, and to have deeply impressed upon me what the power of Christianity is to sustain under protracted suffering and the approach of death. I have more than once been at the brink of the grave myself, and was led to see the need of a Saviour, and to experience that He is mighty to save, at a time when recovery was very doubtful. I have supposed that, in consequence of these things, I could better enter into Dr. Reid's conflicts and triumphs than many could. . . . I have a great delight in the study of men's lives." "I promise myself an amount of personal gain from the contemplation of such a life as John Reid's was, that will amply recompense me for any trouble. To promise this is presumption; I should rather have said that I pray for God's blessing to myself and others in connexion with the undertaking, and already have cause to thank Him that He has put it into my heart to take up the matter. Let not your prayers, my true friend,[1] be wanting; for nothing but His help will enable me to write serviceably a sketch which

[1] This letter is addressed to Dr. Cairns.

will be keenly criticised, and better not written at all, than so as to do no service to the cause of Christ. I have not the fear of man before me, but I have the fear of my own unworthiness, and a sense of responsibility often dispiriting."

Many remonstrances were made to him as to the undesirableness of giving the 'Life' a religious cast, but he followed out his own convictions of right as to this; and looking back at the close of his work, he says, "It was written with prayers and tears, not to procure me fame or wealth, but to do good." Though published[1] a year later than the 'Life of Cavendish,' the two were on hand at the same time. The first named being the volume issued for 1851 by the Cavendish Society, he was compelled to finish it within a given time, and not until the winter of 1851-1852 was he able to devote his scanty leisure to the completion of Dr. Reid's Memoir. An extract from a letter referring to the employments of heaven, will be read with interest: "I exceedingly like the allusion to the continuation of physiological studies in the world to come, which seems to have been suggested by Dr. Carpenter, and welcomed by Dr. Reid. Religious men of science too little refer to their studies as not destined to cease with their lives. I do not know why it has been left to Unitarians to insist on this, but so it is; and Dr. Priestley is the only chemist who has expressed his conviction that the study of God's works will proceed under His guidance in heaven. This has always been a favourite belief with myself, and I rejoice to see that Dr. Reid looked forward to prosecuting his acquaintance with the works he had begun to study on this earth. I doubt not that he looked to heaven as a place of holiness far more than as a temple of knowledge; but the spirits of the just, I cannot doubt, feel no such difficulty in combining faith and reason, moral purity and intellectual labour, as we do. A dying minister, quite ignorant of physical science, said to a brother who made it a great study, 'Samuel, Samuel! I'll know more of it in heaven in half-an-hour than you have learned all your life.'"

For the wonderful story of Dr. Reid's gradual preparation for

[1] 'Life of Dr. John Reid, late Chandos Professor of Anatomy and Medicine in the University of St. Andrews.' Edinburgh: Sutherland and Knox. 1852.

entering on those nobler heavenly pursuits, we refer the reader to the volume itself. The nature of his disease, and the sufferings entailed by attempts at cure, may form an obstacle to its perusal in the minds of many, but the lessons it bears for each one, richly repay an effort to overcome the natural shrinking from painful topics. Care has been taken to make it acceptable to the general as well as the professional reader, by the omission of technicalities; and as the interest it inspires is founded on sources connected with no passing events, it will probably continue to hold a high place amongst biographies. Much in it reveals the inner life of the writer, and thus there may be recognised "the vivid lines of an autobiography painted on another canvas." In it, too, is to be found a specimen of his skill in popularizing a difficult subject, while describing the nervous system, to which Dr. Reid had devoted much of his research. Abundant evidence was given to the author that his aims in writing Dr. Reid's 'Life' had been fulfilled. Private letters from medical men and others show that they who sow in tears, bearing precious seed, return bringing their sheaves with them. The journals of the day contained notices highly favourable, with one exception, viz., the 'Westminster Review,' which took deadly umbrage at its religious tone. From the author of the 'Life of Cavendish' this periodical hoped for better things; but over the general public, especially the religious portion of it, nothing that George Wilson wrote exerted a power so winning as this book. A second edition of it has been issued.

In 1852 there also appeared in the 'Travellers' Library' of Messrs. Longman, the reprint of an article, written at the request of Lord Jeffrey for the 'Edinburgh Review,' on 'Electricity and the Electric Telegraph."[1] On its first appearance, this article was generally received as the most clear and vivacious exposition of the subject that had been issued, and considerable additions were made before its separate publication. Lord Jeffrey speaks of it in a private letter as an "admirable paper, giving a luminous account of the invention" of the telegraph. A notice of the first edition says, "If any one is des-

[1] 'Electricity and the Electric Telegraph, to which is added the Chemistry of the Stars.' Longman and Co.

tined to open up a royal road to science, it is Dr. Wilson. He is quite matchless in his use of felicitous illustrations, while the hearty, off-hand way in which he carries us along with him, makes us forget that he is dealing with the most abstruse mysteries of science. It is seldom that we find a man so eminent in science retaining all the warmth and freshness of humanity about him. He clothes every subject he touches with the bright hues of fancy and the warm sympathies of a human heart."[1]

In addition to this essay, there is in the volume one originally published in the 'British Quarterly Review,' entitled 'The Chemistry of the Stars.' It is an endeavour to determine the extent to which we can ascertain the relative difference of chemical composition between the earth and the heavenly bodies. The learned author of the 'Plurality of Worlds' says of it:[2] "Dr. George Wilson has, in his lively tract on 'The Chemistry of the Stars,' made some very ingenious reflections, tending to show that the earth, the planets, the stars, and the sun, are probably very different from one another."

This essay has somewhat puzzled critics. One is disposed to call it "a scientific *jeu d'esprit*;" another thinks it "an ingenious and eloquent argument respecting the stars and their inhabitants, exhibiting the characteristic marks of Dr. Wilson's writings—great clearness, force, and originality of style, with uncommon felicity in the selection of homely and apt illustrations." A third reminds us that its precedence of the 'Plurality of Worlds' gives it a claim to the notice of those who study the discussion which followed the issue of that work.

In a second and revised edition of this number of the 'Travellers' Library,' in 1858, there is inserted a description of the Atlantic Cable, with verses entitled 'The Atlantic Wedding Ring,' which appeared first in 'Blackwood's Magazine.' Two unexpected tokens of admiration of those verses speedily reached their author,—one a translation of the poem into French, and the other, a request from the conductor of the Hull Vocal

[1] The article on Electricity, as it appeared originally in the 'Edinburgh Review,' is reprinted in Littell's 'Living Age,' No. 290, December 1849. Boston, U.S.

[2] Preface to Third Edition, p. viii.

Society, for permission to set a portion of it to music in the form of a cantata.

The last of George Wilson's publications in this busy year was a pamphlet, called forth by the occurrence of a vacancy in the Chair of Chemistry in the University of Glasgow, by the death of the learned and renowned Dr. Thomas Thomson. Its object was to set forth the needless obstacles which the Scottish University Test Act placed in the way of those who, like himself, could not conscientiously sign the Confession of Faith and the Formula of Obedience. The test had been represented in Parliament as a form which might be "relaxed where a good reason for such relaxation existed." In the University of Edinburgh, indeed, it was usually ignored, but in Glasgow, St. Andrews, and Aberdeen, it was rigorously exacted. On one occasion, however, the reality of its powers was fully proved by the exclusion, in 1847, of a candidate for the Edinburgh Hebrew Chair.[1] The Glasgow Chair of Chemistry being a Crown appointment, Dr. Wilson addresses his remarks to the Secretary for the Home Department.[2] A few biographical data are incidentally furnished, while the writer modestly sets forth his claims; the object he had in view, however, was not a selfish one, but rather the ungracious task of standing forth on behalf of all who, like himself, were not members of the Scotch Established Church. If the test cannot be wholly abolished, he pleads, at least, for mitigation of its rigour. Happily a few more years brought about its abolition; and whether his pamphlet aided this result or not, it, at all events, served to call forth expression of the estimation in which he was held by the general public, and to show the striking union in him of unflinching boldness in a right cause, with the modest simplicity and gentleness which more usually characterized him. He was by this time recognised as "one of two brothers who rank among the most distinguished *savans* of Edinburgh. One of the two is the author of the most learned and judicious antiquarian work which has of late years been

[1] Mr. Macdouall, now Professor in Queen's College, Belfast.

[2] 'The Grievance of the University Tests, as applied to Professors of Physical Science in the Colleges of Scotland: a Letter addressed to the Right Honourable Spencer H. Walpole, Secretary of State for the Home Department,' pp. 48. Edinburgh: Sutherland and Knox. 1852.

produced in Scotland. The other is a well-known chemist, and the contributor, if we mistake not, of most of those articles on scientific subjects in the 'British Quarterly Review,' which we have read with so much delight." In an article on the "Scottish University Tests and the Glasgow Professorship of Chemistry," the 'Spectator' says, "Dr. George Wilson comes forward as one of the most eminent British chemists, one who, though a young man, has already achieved high scientific and literary reputation, and has been for years engaged in teaching his special science, to inform the Secretary for the Home Department, in whose gift the appointment to the Glasgow chair practically rests, that because of these tests he cannot offer himself as a candidate. Here is both hardship positive and hardship comparative; a hardship to be excluded, a double hardship to be excluded when others to whom the same objection applies, find themselves not thereby debarred."[1] The allusion here may be to devices for overcoming the difficulty in the way, mentioned in the pamphlet; how a professor-elect declared that he regarded the tests merely as "Articles of Peace;" another, having signed the bond, went to a bookseller's to discover what it was he had signed; and a third affirmed that the documents he had subscribed contained "the confession of his faith, and *a great deal more*."

The few remaining literary fruits of the ten years under notice we leave for the present, not to overburden a chapter into which so much work has already been compressed.

[1] 'Spectator,' September 11, 1852.

CHAPTER IX.

INFLUENCE ON OTHERS—INNER LIFE—FAILING HEALTH.

"'Twas a sight
Of wonder to behold the body and soul.
The self-same lineaments, the same
Marks of identity, were there:
Yet, oh, how different! one aspires to heaven,
Pants for its sempiternal heritage,
And, ever changing, ever rising still,
Wantons in endless being.
The other, for a time the unwilling sport
Of circumstance and passion, struggles on;
Fleets through its sad duration rapidly."

QUEEN MAB.

HAVING taken a general view of the results of the years of labour noticed in the preceding chapter, let us now retrace our steps, and mark the springs of action and the impulses received during the period which may be considered the summer of George Wilson's life: in it the harvest was ripening which, not long after, showed itself ready for the sickle and the ingathering.

The ardent love with which his students regarded him found expression at the close of the Session 1845-46, in the presentation of a very handsome analytical balance, weighing to the 1000th part of a grain. It was given at a public dinner, at which Professor Goodsir, Dr. Seller, Professor Dick, and other friends, united with the students in manifesting kindly regard and respect.

The influence George Wilson exercised over those under his care was very great; indeed, the love with which he inspired

those much with him, more resembled that of affectionate relationship than the usual intercourse of teacher and pupil. Deceit, dishonourable conduct, or idleness, met with little mercy; but with faults of ignorance, youthful impetuosity, or thoughtlessness, he had wonderful patience, accompanied by a power of eliciting the better points of character, which seemed at times to transform a youth of whom all were in doubt, into one abounding in rich promise. A pupil says of him, after an interval of ten years, during which there was little intercourse, and that chiefly by letter:—"I cannot say more than that Dr. Wilson's life and character have always been an example to me, as a realization, in some degree, of the highest life. My acquaintance with him would in ordinary cases have been but slight, as I was thrown so little into his society, and that at an age when I was hardly capable of valuing him. But there was something in him which I cannot define, which made me feel more than ordinary friendship, real affection for him, boy as I was; and I think this feeling towards him is what all had who worked under him while I was with him. That something consisted partly in an earnestness and practical goodness which inspired one with respect and admiration, partly his great consideration for others, which gave his inferiors confidence—I mean inferiors in intellect, experience, or anything else—and a warmth of feeling which drew one to him immediately, and which, so far as I knew him, never cooled. All this falls very far short of my aim. I can only say that I count it a blessing to have known such a man, such an example."

His assistants in the laboratory and lecture-room were objects of much interest to him, and in almost every case his regard was warmly reciprocated. One of them says,—"He always treated us as if we were his dearest friends;" showing that the delicate courtesy of his manner was appreciated. Another writes,—"I shall never require anything to remind me of one who was so true a friend of mine at all times, and whose memory I respect beyond that of any other man I ever knew." This attractiveness was one of the most remarkable features of his character; while it made him almost idolized by the circle of friends to whom he was best known, it extended to his public audiences, and even to the chance acquaintances of a day or hour. "The

wonderful power he had in his genial happy nature of making others love him, is strange and almost overpowering in its manifestations." One who knew him from his writings says,—"So much of the man himself came out in all that he said or wrote, that even in those who knew him only from his public actings, there insensibly grew up the feeling of personal attachment to the great heart that welled over in his writings and addresses." To multiply testimonies of affection of a striking nature would be easy, but they could no more convey an impression of the truth than would a description of the fragrance of a bouquet of flowers, bring back the exquisite aroma which was so gladdening and refreshing. Friends who knew him will think this attempt to speak of his lovableness a failure, while to others it may seem overstrained and unnatural. We shall only, therefore, in addition say, that no one was more surprised at it than himself. What could make So-and-So take such a fancy for him, showing it by untiring labour on his behalf, was often a subject of speculation, the riddle being sometimes solved by his saying that there surely must be something of the hypocrite in him, or people would not esteem him so much better than he deserved. "I cannot but painfully contrast," he writes to a friend,[1] "my own poor deservings with your estimate of my worth; a little praise is all that is good for me, and I get frightened when I have much of it. I shall try to deserve your good opinion, and that of your kind friends." This grace of humility, doubtless, cast a charm over all his acts, and in it somewhat of the secret of influence may be found.

In the spring of 1847, a poem, addressed by him 'To the Stethoscope," attracted much notice. It appeared in 'Blackwood's Magazine,' and the Edinburgh doctors, who eagerly sought to discover the author, were not a little surprised to find him one of themselves. In the few words of preface to the lines, he says, "The stethoscope has long ceased to excite merely professional interest. There are few families to whom it has not proved an object of horror and the saddest remembrance, as connected with the loss of dear relatives, though it is but a revealer, not a producer of physical suffering."

[1] Mr. D. Macmillan, Cambridge.

Having occasion to send to Lord Jeffrey, with whom a warm friendship was springing up, a volume for perusal, a copy of the 'Stethoscope' accompanied it, which was acknowledged by him thus: "I have not yet had time to read much—*except the poem*—with which I was much gratified, and (if you will allow me to say so) also a little *surprised*. From the nature of your pursuits, I certainly was not prepared to find *this* among your gifts. But it is one of which you have reason to be proud,—the specimen you have sent me being full of beauty and deep feeling, as well as having a great command both of versification and poetical diction. It is, perhaps, rather too much expanded; but your two pictures (especially the first, of the consumptive girl) are very touchingly and gracefully executed, though I can scarcely forgive you for giving us only the tragic and fatal vaticinations of your stethoscope, and not cheering us before concluding with some of its happy deliverances and revivals. Indeed, I think I should be justified in imposing such a supplement as a task for your last days at Dirleton."

To the suggestion made in the close of this letter, George could only reply, that as the joyful side of the picture had not fallen to his lot, he could not portray it. The other, alas! was but the welling forth of thoughts which, by expression, relieved the scorched heart, on which they had been imprinted as with letters of fire. "I have not been describing imaginary scenes," he says, "I have written some of the lines with tears in my eyes."

The beauty of many of his poems has been freely acknowledged, but exception made to their frequent irregularities of metre. A quotation from a letter to Dr. Cairns, who had alluded to this blemish, gives his own idea of the matter. "When you come to Edinburgh, be sure to bring that Latin hymn-book with you. I won't give you a translation of any one of those grand hymns, because I can't. It is above and beyond me. I could not, apart from everything else, reproduce their exquisite rhythm and metres, without which they would become alien paraphrases. I—to descend from heaven to earth—do not use irregular metres, because I despise regular ones; neither do I think the former preferable. I use them because

I cannot compass the latter. At school, though a dux, I was a poor hand at scanning, and most unprolific in Latin verse. In the days of my folly, some young ladies tried to teach me to dance, but signally failed, for I could not keep the step, and was foiled both in waltz and quadrille. Part-singing is equally a closed region to me, for I never could keep time.

"Understand, then, that I do my best, not wilfully following divisive courses, but using the eccentric gift that is in me as well as I can. Do not say this hymn will not scan; but this hopelessly unscannable hymn will, or will not do. I am not an engine running on hexamèter, pentameter, long metre, short metre, 'old' or 'new hundred' rails. I am an unlicensed privateer, now sailing discreetly before the wind, and then tacking at a sharp angle; now covered with canvas, and then with the sweeps out, oaring off the lee shore. The end of the manœuvring, however, is not the manœuvring, but only like the steadiest lugger or straightest sailing steamship, to reach my port; and I need lots of steerage way. Now, the application of all this tirade is, that I have several hymns on hand, which I think will soon get finished. Also, since out here [a country residence] I have made large additions, spite of rheumatics and the east wind, to a long poem, treating, with shocking irregularity of metre, of this life, and of the life to come, on which, when completed, and that soon too, I trust you shall sit in judgment."

This reference, in 1848, is to 'The Sleep of the Hyacinth, which never was finished, and which has been given to the public in its fragmentary state.[1] The hymn enclosed in this letter was probably the following, which appeared in 'Blackwood's Magazine' soon after. During the previous winter he had only been once at church owing to the state of his health. "On one of the stay-at-home Sabbaths I wrote the enclosed hymn, which is at least not the expression of a sham feeling, but an honest and earnest utterance of what I daresay many an invalid has felt; only don't suppose from the second line that I am a weeping philosopher. That's a fetch. I have roared in the hands of the surgeons, but I never cried."

[1] See 'Macmillan's Magazine' for April and June 1860.

THE WINGS OF THE DOVE AND THE EAGLE.

PSALM lv. 6; ISAIAH xl. 31.

As I lay upon my bed,
  Weeping and complaining,
Turning oft my weary head,
  Hope and help disdaining;
Lo! before mine eyes there stood,
  Vision of an ancient wood,
Full of happy birds pursuing
  Each the other with keenest zest;
And I heard the plaintive cooing
  Issuing from the turtle's nest,
Till I murmured at the sight,
  And forgot God's high behest;
"Had I but your wings, I might
  Fly away and be at rest."

Then the low, sweet, plaintive cooing
  Of the fond maternal birds,
Seemed itself with thoughts imbuing,
  And at length flowed forth in words.

"Plumes of doves and fluttering wings
Are but vain and feeble things,
  Timidly the air they fan;
Scarcely would they serve to raise thee –
Need the truth at all amaze thee?
  O'er this earth a little span.
Look thou there!" and, lo! an eagle,
  From his nest amid the stars,
Stood before me, with his regal
  Front, and venerable scars.
In a moment, wide extending
  His great wings (so seem'd my dream),
He was in the air ascending
  With a wild, exulting scream.
Fiercest winds, and rude blasts blowing,
  Could not stop his bold careering,
Higher still and higher going
  He kept ever upwards steering,
Till I lost him in the zenith,
  Far above the mid-day sun,
Where he seemed like one that winneth
  Rest in heaven when work is done.

"Judge thou, then," the voice said, "whether
  This or that's the better thing—
Rainbow-tinted dove's soft feather,
  Or the eagle's ruffled wing?"
"That's the better!"—"Rest then still!
  In thy heart of hearts abase thee;

Lose thy will in God's great will.
  By and by He will upraise thee,
In His own good time and season,
  When 'tis meet that thou should'st go,
And will show thee fullest reason
  Why he kept thee here below.
Wings of doves shall not be given;
But to lift thee up to heaven,
Thou shalt have entire dominion
O'er the eagle's soaring pinion,
Thou shalt mount to God's own eyrie,
  And become a crownèd saint,
Thou shalt run and not be weary,
  Walk, and never faint;
Therefore utter no complaint."

Now I lie upon my bed
  Saying, "Be it even so,
I will wait in faith and hope
  Till the eagle's wings shall grow."

The subjects of his verses are very varied, some being sacred, and expressive of his deeper feelings; others brimming over with fun, as in the youthful days, in the form of Valentines, prefaces to books for autographs, and rhyming letters. Of the lighter effusions we may name, 'A Naughty Graph;' 'Valentine to S. D.'s donkey, Flora;' and a series of Valentines from Redivivo, his terrier, to Lady Fanny, a pet squirrel, in which both these animals show a power of versification highly creditable to them.

A specimen of the more humorous will not be unwelcome:—

ONE OF THE ADVANTAGES OF NOT BEING ABLE TO WRITE YOUR NAME.

I've heard a story of a country wight,—
  Whether 'tis true or not I cannot tell,—
Who never had been taught to write,
  And very likely could not spell.
He kept a sort of shop of shops,
  Dealing in blacking, boots, and teas,
In Epsom salts, and humming tops,
  And cotton handkerchiefs, and Stilton cheese.
His windows were so full they cut a dash,
  And he displayed his goods, and people wanted them;
And if they could not pay in cash,
  And asked for credit, why, 'twas granted them.

But how was 't possible to keep his books
When he was ignorant as any nigger,
And never learned to make pot hooks,
Or found, in early life, the way to figure?
Why, this he did, he used his pen,
But not to mark the money due him;
When he sold any goods, why, then
He pulled his ledger out and drew 'em.
If hats were bought, he painted hats,
If China-ware, he sketched the dishes;
If mats were sold, he drew the mats;—
Or herrings? portraits of the fishes;
And so, with some mysterious signs
That made his pictures clearer,
He marked, beside his quaint outlines,
Whether his goods were cheap or dearer.
One day a customer came in to settle
And begged his bill might be looked up,—
There drawn against him stood a kettle,
A pound of sugar, and a breakfast cup.
"And I find also," quoth the dealer,
"Here sketched against you, if you please,
Nothing you see, Sir, could be clearer,
The portrait of a skim-milk cheese."
"A cheese! oh no!" the other cried,
"I never bought a cheese from you."
"You did indeed," the first replied,
"And there's the figure of the cheese I drew."
And so he showed a round thing like the moon,
Or any other round thing that you please,
A hoop, a ring, a saucer, or a spoon,—
But he who drew it said it was a cheese.
A cheese it could not be, the man protested;
And so there rose a very strong contention—
Cheese or no cheese, they bitterly contested,
And lost their temper in the hot discussion.
At length the dealer, making no impression,
Suddenly stopped and changed his ground.
"My good man," says he, "make at least confession,
You lately purchased something round."
"Round!" quoth the customer, "why, wait a bit!
Ay, sure enough, as I'm Jack Bilston,
(We'll square it now, the nail you've hit),
I bought from you last spring a millstone."
Loud laughed the dealer; "I forgot—
I see you did not try to diddle—
So put within the ring a dot,
To show the axle in the middle:
I mark my cheeses from my millstones so,
But I was hurried on that day,
And so forgot the dot; but you must go,
Well, here's the sum you have to pay."

The two shook hands and parted friends,
And wondered they had been so hot.
A story 's good if well it ends,
And here you see 's the wondrous dot — .

MORAL.

This worthy man no doubt had his distresses,
But well he could afford to laugh ;
He might mistake his millstones for his cheeses,
But none could ask him for his autograph.

As the friendship with Lord Jeffrey has been alluded to, one or two extracts from his letters may be given to show the extent of his regard. Feeling assured that had Lord Jeffrey now been in life, a similar testimony would have been given, we feel at liberty to make use of them. In a note acknowledging a paper, possibly his article on 'Chemistry and Natural Theology,' in the 'British Quarterly Review,' Lord Jeffrey says,—"I thank you very heartily for your touching and earnest homily. I do not perhaps go entirely along with you in some of your conclusions, but I never read anything you write, without feeling myself the better for it, and being made more aware of the leavening and pervading effect of an earnest and fearless charity." The following letter is given entire, with an omission only of some extraneous remarks, of temporary interest. It apparently contains a reference to the article mentioned in the preceding extract :—

"24, MORAY PLACE, *Wednesday, 15th March* 1848.

"MY DEAR DR. WILSON,—I was very sorry to miss you when you took the trouble to call the other day, and if I had not been very seriously unwell ever since, I should have made another attempt to see you before starting for England, as (if at all able for the journey) we now propose doing in the course of to-morrow,—not that I have anything in the way of business, or of any moment otherwise, to talk to you about, but merely to shake hands with you,—to thank you for the very striking, *courageous*, and useful paper you were good enough to send me ; and to assure you (though I feel I can do *that* better in this way than to your face) that I have a very sincere admiration for your gifts and attainments ; and, if you will allow me to say it, a very true affection for the many lovable traits I have discovered

in your nature. The gentle and magnanimous cheerfulness with which you bear continual sufferings, and the contentment with which you have accepted a position which every one must feel to be inadequate to your merits, have made a deep impression on me from the first time I had the honour of your acquaintance; and I really cannot resist this opportunity of saying, both that I shall be proud to learn that you think the offer of my friendship worthy of your acceptance, and beg you to believe that there are few things which would gratify me so much as to be enabled at any time to render you any service.

"I am not without fear that you will think all this very intrusive and impertinent—and yet I hope not. At all events, I really could not help it, and I am sure have been as far as possible from any purpose of vexing or offending you. . . . . I hope this vernal-looking weather will tempt you soon to your pleasant retreat, and that we shall all meet at Craigcrook in improved health before the end of May. Meantime, believe me always, really and truly, very affectionately yours,

"F. JEFFREY."

This warmth of regard continued unabated, and it may be supposed, met with a ready response. In January 1850 George writes to Dr. Cairns,—"You will have heard of Lord Jeffrey's death? a great blow to me, for I had got to love him, and feel a very strong affection for him. I called the very day of his death, and found him, to my utter horror, believed to be rapidly sinking."

In the spring of 1847, there came again one of those great waves of sorrow which, from time to time, well-nigh overwhelmed George.

> "Yes, billow after billow—see, they come
> Faster and rougher as yon little boat
> Nears evermore the haven."

The heart-affection from which his sister Mary had suffered for many years, had compelled cessation of active exertion, and in her comparative exclusion from the outer world, it had been her great delight to act, so far as strength permitted, as George's amanuensis, entering into all his literary pursuits

with keen interest. The two were so inseparable, that friends often compared them to Charles Lamb and his sister Mary, between whom a similar union existed. Her gentle, patient endurance of sufferings made their gradual increase, for some months previous to her death, less marked in the family, and only one night of great distress intervened between the ordinary routine, and the blank occasioned by such a loss. The following letter to Dr. Cairns conveys the first expression of George's desolation :--

"*April* 21, 1847.

"DEAREST FRIEND,—I have the mournful news to communicate to you, that Mary is gone to the world of spirits. How deeply I loved her I need not tell you, nor how deeply she deserved the inadequate affection I felt for her. I count upon your full appreciation of the greatness of my loss, in the sundering of the earthly bond between Mary and me.

"She died this morning about eleven o'clock, so gently that the spirit had fled before Jessie, who was watching her, observed its flight. . . . We apprehended no serious danger; . . . yesterday we thought her better than she had been some days before, and I was out in the evening at the School of Arts, where I was detained from seven till after ten o'clock. . . . Though her agony was great, she expressed calmly and distinctly her faith in Christ, . . . comforted herself with passages of her own remembering, and prayed audibly and earnestly, referring at intervals to what an awful thing it would have been, had she then required to think for the first time of going to judgment. . . .

"How the unkindnesses I have shown her come back on me now! To think that yesterday was the last day that I was to spend with her on this earth, and I did not know it. A round of necessary, but trifling duties, kept me from her; yet I loved Mary better than I loved anything else in this world. For the last six years we had been greatly together. We knew each other so well, and she was so fond, so kind, so self-denying, so generous, so noble in all respects, so devoted, that now that she has followed James, I feel alone. Nobody can ever be to me what she was. I cannot estimate my obligations to her. I have leant so long on her that, now that her support is gone,

I feel as lame in spirit as I am in body. Pray for me, my dear friend, and her dear friend. Pray for me; I need your prayers. It seems but a black dream, and yet it is a reality to make dark a lifetime. I will not be long of joining her."

Three months later, in a "hasty laboratory note" to the same friend, he says, "I have enjoyed more, latterly, I think, of the sense of the Holy Spirit's help than I have ever known before. Mary's memory is full of blessed associations. The succeeding two months will, I trust, yield me still more leisure for sacred things."

"*December* 1847.

"Pray for me much, my dearest friend. I see few, very few, devout people. From the public services of the sanctuary I am cut off. I never hear a prayer. When I look into my heart I see so much sin there; I give way so often to unchristian passions and gratifications, that I tremble at the thought that God's grace, so little improved, will by and by be taken away. Counsel me; I have no Mary now, with her gentle, impressive words, and the utterings of lengthened Christian experience, to reprove my sins and follies, and keep me from evil. She was my mother in Christ, and you my father."

"*March* 31, 1850.

"Your letter was to me unspeakably dear, and again reminds me of what I never can or will forget, that you are bound to me by ties such as connect none other of my friends to me. The dark past, which was long to me the very blackness of darkness, has now stars above its horizon, and the shadow, not of the grave, but of the world to come, over it. I begin to think abidingly of Mary, not as one of the dead, but as one of the glorified living, though at no time do I realize it less than at this mournful season of the year, which has witnessed the death of so many of my dearest ones. The last lecture-night at the School of Arts remains as the ineffaceable remembrancer of the latest great sorrow, and inevitably links other griefs of a kindred sort with it; and the whole of April is to me a month of physi-

cal fatigue, depressed energy, and painful emotion, which I know better than to cherish, but have not learned the way to cure. . . . Of James I think with more mingled feelings than of Mary, but with unabated, nay, with ever-mellowing affection. . . .

"On all this I will say no more. It would distress others too much to speak thus to them, and might seem to betoken less affection for their devoted love than they deserve or I feel. There are some affections which do not grow by excluding or uprooting others, but, like vines and elms, grow best together, and I should mourn the day when I found it impossible to cherish together love for the departed, and the living."

The loss of the terrier, Grim, was associated with his sister Mary's love for the dog; and in December 1849 he writes to a friend, Mr. J. C. Brown, "Have they told you that Grim is dead? Poor little fellow, he was suddenly attacked in the very midst of his gambols by a stroke of apoplexy, and died in a few hours, in spite of the promptest treatment. The sight of animal suffering is always to me very horrible, and the loss of my kind little companion has vexed me grievously. He was dear to me for his giver, my good cousin Alick's sake, and still more as a memento of my dear sister Mary, with whom I always in thought associated him; and I feel his loss very bitterly. Somehow, Christmas has always been a sad period with me, and this year is like preceding ones in that respect." Of a visitor who was present when Grim was seized by illness, he remarks: "Your brother David is a fine fellow, his sympathy with me over my little dog's dying agonies endeared him to me. I loved the poor fellow for Mary's sake, and lamented him sincerely." Grim was a general favourite with his master's friends, and was always recognised as a member of the family, being spoken of as "my son Grim." A letter to Miss Abernethy contains this paragraph: "Mi respectabel parint is tolerabil, and if the Guvirnor wood not li on the sofa, but run after the geeg as i doo, which wood be quite well, butt the oald geinleman luvs too grumbel.—And am yoor afekshinate stepsun,

"GRIM WILSON."

It is recorded of him that "he never said an ill word in his life, except once when he cried 'Bow, bow,' after a man with bowed legs."

A note-book contains the following lines to his memory :—

TO THE SPIRIT OF A DECEASED TERRIER.

My little dog! I loved thee well,
Better than I to all would tell;
When thou wert dead, a shadow o'er my spirit fell.

The music of thy pattering feet
That came so gladly me to meet,
Will never more my senses greet.

All are at rest; thy wagging tail,
Thy little limbs that did not fail
For many a mile o'er hill and dale.

Where art thou now? myself I ask,—
In vain Philosophy I task;
She cannot here her blindness mask.

Art thou within that Sirian star,
That shines so bright, and seems so far
From this dim world in which we are?

Where'er in the Universe thou art,
If still of it thou form'st a part,
Thou hast a place within my heart.

What are thy thoughts, thy hopes, thy ways?
What are thy duties? what thy plays?
How spendest thou the livelong days?

Thou didst not love on earth the Sunday,
It was so grave: it was no fun-day;
Thou couldst have wished each day a Monday.

Dost thou with soul of shadowy cat
Fight? or with spectral spirit-rat;
Or slumber on celestial mat?

After a time a successor to Grim was found, who seemed to have so many of his ways, that it was declared his spirit had returned in this new shape, and the dog was, on this account, named Redivivo, contracted into Vivo for ordinary use. It was this dog that corresponded with the squirrel. His portrait is given by George in a letter: "I wish you saw my dog, a Skye terrier, considered one of the finest of his kind, though some of

my lady friends hold that the uglier a terrier in ladies' eyes, the more beautiful he is in gentlemen's. I am sure, however, that you would admire my dog, with his long, silver-grey, soft hair, steel-grey drooping ears, finely feathered tail, and mild brown eyes. He has a long body, short legs, and great broad feet like a mole's. He is good temper itself, and as full of fun and sagacity as a clever child. Indeed, I call him my son, and my little nieces always salute him as their cousin."

It will be seen from these quotations that the love for animals shown in boyhood continued undiminished, and while it afforded pleasant relief from the serious cares of life, it contributed to the buoyancy and freshness so characteristic of him.

Evidence has already been afforded of the new principle by which George Wilson's life became actuated after his illness of 1843. How strongly it influenced him we learn chiefly from his letters, as nothing was more distasteful to him than the obtrusive profession of religion common in our day. By no act or word did he ever say, "I am holier than thou;" a clear perception of the high standard set before him, led rather to his esteeming himself, like Paul, "less than the least of all saints."

In May 1845, he writes to his much loved friend, John Cairns:—"When I contrast your profession with mine, with which in much of the machinery made use of in other points, it has many affinities, I could envy you your glorious calling. . . . I had been thinking, as I should have no evening work in the way of lectures, and far less every way to do, of teaching a Sabbath-class, but Mary remonstrates so strongly on the score of health, and I feel the argument so reasonable, that I am shaken in my intention, though it is not abandoned. I must find some way of serving Christ better and fuller than I have employed hitherto, or I shall truly be an unprofitable servant."

"*December* 1847.

"I have found out a means of doing good, that I hope God will bless. I discovered recently that sick people, who will not stand a word of religious advice from their neighbours in health, are more ready to listen to another sick man like me. You will think I have been very late in making so notable a discovery.

Never mind that; one of my pupils of a former year, a remarkably acute, hard-headed, and self-reliant lad, has recently passed into one of the latest stages of a hopeless disease. Knowing that his family, though in intellectualities much above the average, in so far as religious knowledge is concerned, were little likely to make known to the lad how soon he must go to meet God, I cast about for some means of getting at my old pupil. His father was in town, and promised to call on me, but was prevented. I intended, had he done so, to have asked his permission to write to his son, but it was a formidable business to do so by a formal letter. Behold, however, the mercy of God, and His answer to the prayer of a servant who had been asking Him for work! Whilst I was resolving and hesitating to write, a letter came from the lad himself, asking me to write to him occasionally, as it would be a kindness. I replied at once, and found him glad to have the ice broken in reference to his spiritual state. An exacerbation of his illness has turned all his thoughts towards another world, and now he sadly beseeches me to write as often as I can."

In the same year he apologizes for the non-appearance of a hymn: "It, and all other rhymical work, have been stopped by a painful but pleasing occupation, which has taken up the quiet hours of the Sabbath. A young lady of fourteen, dying of consumption, has asked me to write to her, and I have been trying to tell her how the grave may be robbed of victory, and Death of his sting. She is in the country, and has got to expect a letter every week. I don't like to disappoint her, for she is a singularly amiable, gentle person, to whom Heaven, I believe, has already held out a welcome; and so I have been stopped in the hymns."

The young lady died about a month later than the date of this letter. A series addressed to her are full of the tenderest counsels and consolations. They gave great pleasure and comfort to her in the prospect of quitting this world, and to many besides have they been the means of spiritual good. A valentine sent to this invalid, testifies to the kindly thoughts he cherished of her temporal, as well as her eternal happiness. The accepta-

bility of his religious letters, written in his most winning style, became so well known, that abundant scope was afforded for work in this direction. Of these several series remain, affording evidence of his deep earnestness and affectionate solicitude. The simplicity of the plan of salvation, the glorious character of the Saviour, and the privilege of prayer, constitute the prevailing themes. Even to irreligious people his letters of this kind were welcome, while similar appeals from others, roused their indignation.

In 1848 we find him saying, "I long for work in the service of Christ. I have found the means of doing a little good by writing to invalids; but I may do that and much more. The Medical Missionary Society are to have some lectures to students of medicine this winter. I am to give one, I believe; that is so much." "The students say that they don't care about addresses from ministers, but they'll listen to a lecturer on chemistry, and I hope I shall succeed in speaking a seasonable word to them."

The title of his lecture, one of a series delivered at the instance of the Edinburgh Medical Missionary Society, was 'The Sacredness of Medicine as a Profession,' and it has been published with the others.[1] A perusal alone can enable us to follow him, while he points out the moral, benevolent, and Christian character of medicine; but a few of its closing sentences may show its spirit: "I adjure you to remember that the head of our profession is Christ. He left all men an example that they should follow His steps; but He left it specially to us. It is well that the statues of Hippocrates and Esculapius should stand outside of our College of Physicians, but the living image of our Saviour should be enshrined in our hearts. . . . He is not ashamed to call us brethren. May none of us be ashamed to call Him Lord! May we all confess Him before men, that He may confess us before the angels in heaven!"

Of this lecture he writes, in 1850:—"I had the unspeakable satisfaction of learning recently from a most unlooked-for quarter, what I almost fear to mention, viz., that that little medical

[1] 'Lectures on Medical Missions.' 1 vol. Sutherland & Knox, Edinburgh. 1851.

mission lecture carried the arrow of conviction to one careless doctor's heart. So few particulars reached me that I fear to build upon the statement, but the very possibility of its being true is enough to urge one to new endeavours."

Of a similar address, in 1853, unpublished, he tells Mrs. J. H. Gladstone,—"On Thursday last we had a very pleasant meeting of the medical students and practitioners, for religious purposes. I was far from well, and went to it, repeating from my heart the recurring prayer, that Christ would at least not permit me by anything I said, to throw a stumblingblock in the way of any present, or to hinder them in their strivings towards righteousness. And my prayer was answered, I trust. I spoke with freedom and earnestness to a most attentive set of listeners, some sixty in number; and many came up after I had finished, to speak encouraging words to me. My subject was, the 'Example supplied by the Lives of Christian Physicians.' I took four who stand in special relation to our medical school here,—Dr. Turner, the chemist; Dr. James Hope, author on Diseases of the Heart; Dr. Abercrombie, our physician of highest reputation among recent medical men here; and Dr. John Reid. They are the latest famous Edinburgh students of medicine who have died. The great points I insisted on were, that all those four professed to have, 1. Undergone a great spiritual change; in connexion with which they were, 2. Great Bible readers; 3. Great offerers of prayer; and, 4. Faithful keepers of the Sabbath.

"I urged the desirableness of us all imitating their example in these things, addressing my entire audience, although it included many seniors, and one of our professors, as my fellow-students; and claimed for the title of student that it was the highest of all titles given by Christ, and intended to apply to His disciples as students throughout eternity, of all God's works and ways.

"I closed with a solemn reference to the world of woe, as a place where they have ceased to study, and have but the awful page on which God's denunciations of the ungodly are written to gaze upon for ever; or, if they read, it is only backwards, in the mournful indestructible volume which memory has pre-

served, and which conscience ever holds open before them; and with a reference to Christ as the great example, I concluded.

"I hope you will not think all this a *bore;* I thought you and John would be glad to know how things were managed at our medical meetings here. Ask him to tell me by his own pen, or by yours, of his meetings with the students in London."

A few extracts from letters, according to date, will best illustrate the deep spirituality and growing holiness of the writer. To one who had just lost a brother, he says, in 1845,—"To myself to die and be with Christ, seems so much better than any possible way of serving God here, that I cannot prevent myself thinking of your brother, as Peden did of Richard Cameron, when he came to his grave to say, 'Oh! to be wi' Richie!'" To a fellow-chemist,[1] in 1848,—"There are none, I am sure, who ought to be more religious than men of science, professing as they do, to love God's works, and to know them better than others. There are none, too, who need religion more, for the isolation of their pursuits narrows their hearts, and the struggle for places and distinctions, in which all are involved who, like you and me, must live *by* science as well as *for* it, leads to rivalries, heart-burnings, and disappointments; and sows, with the devil's help, the seeds of envy, hatred, malice, and all uncharitableness. Nothing but the restraining grace of God, and the presence of his Spirit, and the all-prevailing mediation of the Saviour, can keep us from falling. Nothing but the full realization of the manifest and yet ever-forgotten truth, that God is much greater than all his works, and a far nobler object of love, can elevate our affections."

To Mr. Alexander Macmillan, Cambridge, in 1850,—"In what you say of Christ and His example, I cordially join. It is a blessed thing, as a friend said to me, to have a creed; not that any man will be bettered by adopting one, unless it is his soul's belief. I mourn, however, over many whom I know, who are always learning, and never coming to a knowledge of the truth; who are bewailing the bigotry, narrowness, and effeteness of modern churches, and seeking for some new catholicon to heal all. Far be it from me to defend our religious bodies

[1] Professor Voelcker, Cirencester.

from many of the charges made against them. Men are both worse and better than their creeds, which are but imperfect standards by which to try them. Religion should be a life, not a doctrine; and if we cannot find what it should be as the former, from the life of our blessed Lord and Saviour, I know not where we shall find it. Often do I think of those startling words, 'When the Son of man cometh, will he find faith on the earth?' If men, instead of fretting themselves because their neighbours are foolish religionists, would leave them and their real or supposed follies alone, and go to Him who is all wisdom, and all holiness, and all love, they would find differences of creed adjust themselves in the light of that love of God, and that love of our neighbour as ourselves, which are the fulfilling of the law. I rejoice that I have a creed with which I can face death and eternity, and which makes this life often a joyous worship, and always a patient endurance. My prayer is for a closer union to Christ my Saviour; to be able to say as St. Thomas did, with my whole heart, 'My Lord and my God;' to realize to the fullest, His personality and His humanity; and to walk in His steps as a lowly follower, and disciple, and servant. For all my friends, as for myself, I ever ask this blessing. It includes everything, and will open in good time all the locked secrets of Providence, and furnish not *a*—but *the* theory of the universe. I am glad you liked 'Athanasius.' I shall perhaps send you another little thing one of these days; but till I am clear of my present book-writing, I cannot let my thoughts go forth in the way they must do to beget poetry."

The verses alluded to will not be unacceptable to many :—

ATHANASIUS CONTRA MUNDUM.

O Athanasius! thy too subtle creed
  Makes my heart tremble when I hear it read,
And my flesh quivers when the priest proclaims
  God's doom on every unbeliever's head.

Yet I do honour thee for those brave words
  Against the heretic so boldly hurled,
"Though no one else believe, I'll hold my faith,
  I, Athanasius, against the world."

It was not well to judge thy fellow-men,
Thou wert a sinful mortal like us all;
Vengeance is God's; none but Himself doth know
On whom the terrors of His wrath will fall.

But it *was* well, believing as thou didst,
Like standard-bearer with thy flag unfurled,
To blazon on thy banner those brave words,
"I, Athanasius, against the world."

Thy faith is mine; but that is not my theme:
'Tis thine example I would preach to all;
Whatever each believes, and counts for true
Of things in heaven or earth, or great or small,—

If he believe it, let him stand and say,
Although in scorn a thousand lips are curled;
"Though no one else believe, I'll hold my faith,
Like Athanasius, against the world."

To Dr. Cairns, George writes in May 1851,—"I am sure you cannot have more pleasing, and certainly not more profitable remembrances of your visit than we have of your sojourn. I am always quickened spiritually by intercourse with you; always grateful for a word in season. I wish I could see in myself greater growth in grace. It is very slow. I seem to see some loss of downward tendencies, yet I am like a balloon which, in spite of casting out its ballast, does not rise. I cling now little to this earth, and sometimes ask myself, suppose all your bright youthful visions were fulfilled, would you be happy? and I answer emphatically, No! I have had more pleasure in teaching for a friend a Bible-class for three Sabbaths, than I have had in anything for a long season. I had longed and prayed for a more direct way of serving God, and being comparatively well this summer, had secretly resolved to ask this friend to let me address his class one evening, when, lo! he came and besought me as a favour to take charge of it in his absence from home. Surely there is a God that answereth prayer."

It was the custom of Dr. Cairns and himself to exchange letters at the close of each year, reviewing the past, and glancing to the future. In that of December 28, 1851, George says,—"There are white hairs in both our beards, and we are growing graver, as we should do if we were mere animals. Yet I hope sit looser to the world, and nearer to Christ; but not near

enough. This evil heart of unbelief will not quickly soften, and the Saviour is not freely given the central place in it, and the world looms deceitfully large in all my visions.

"To do work for Him, in His spirit, is my increasing desire. May my prayers be heard, and yours be doubled for me. I know a serenity I have not known for months. How much of it is the fruit of better health and less work, how much through God's grace, I will not curiously inquire. They are all His, and only His gifts. The whole household sends you the sincerest wishes for a happy New Year. I seem to feel the pressure of your great kind hand."

After months of over-work and fatigue, he tells the same friend in 1853:—"I can with a rejoicing heart say, that that great and gracious Lord and Master whom we serve, grows day by day dearer to me, and to do His will is to me increasingly the desire of my heart, and its prayer."

Writing to Dr. J. H. Gladstone in 1854, of a medical student preparing for the mission field, he says, "He is in the way of a training which will make him a powerful ambassador for Christ among the subtle, sagacious, metaphysical, oriental nations. I am going to give him charge of a class in summer, to secure for him a thorough familiarity with our noble science. It is a blessed thing to know that our Art, once called emphatically 'the Black Art,' and which, when not held to be the offspring of Satanic collusion, was looked to by the vulgar as fitted only to gratify their lust for gold, can be made by us to serve the cause of Christ. We shall be alchemists of another sort than the older ones, and whisper to an unbelieving world that there sitteth beside the refining furnace, a great Master who can transmute the vilest human dross into gold seven times purified, and died that He might procure for us the elixir of life, and secure for His people a blessed immortality."

It is never a desirable thing to detach religious acts or expressions from their contemporaneous secularities and environments. This has been strongly felt in illustrating George Wilson's inner life, for never could there be a more charming union of playfulness and fun, with high-toned spirituality, than in very many of his letters. They remind one of an air with many variations,

some in a minor key, which never fails, in all its sweet wanderings and eccentricities, to return to the key-note, leaving the listener with a sense of refreshment and invigoration. The mass of such letters is so large, however, that it has seemed undesirable to attempt more than a selection from them. Personal allusions also frequently make them unsuitable for the public eye. Without passing beyond the ten years to which we have limited our consideration latterly, we shall only add, as a closing stanza to this portion, one more quotation from a letter to Mr. A. Macmillan, in June 1854:—"This is a peaceful Sabbath evening, and my heart is full of gratefulness to God for many and great mercies to me. Amongst these are my friends, and my gratefulness shapes itself into a prayer to God that He will give them His choicest blessings, make them like His own dear Son, Christ the Lord, and fill them with His Spirit. And may we all have some work given us to do for Him, and find such pleasure as the angels feel in doing His work and obeying His will!"

The desire to conduct a Bible class was more fully met by a request from some young men, in 1852, to meet with them on Sabbath evenings. It was gladly responded to, and some of them remember with vivid interest those hours, and the elucidations given of the book of Hebrews and that of Ecclesiastes. Very full notes remain as evidence of the great care and diligence with which preparation for these meetings was made. His broken health and constant overwork made it impossible for him to continue this work long, dear as it was to him. His services on behalf of the Medical Missionary and other benevolent Societies, can only be glanced at. It may safely be said that, according to his ability, yea, often far above it, as regards physical strength, he was at all times found to be "ready to every good work."

It has been remarked of George Wilson, that he was one of the very few scientific men who, in this restless age, had never crossed the British channel. This peculiarity was far from being the result of choice, as to see new places, things, and people, was a great delight. But uncertain health made travelling irksome and difficult, while the pressure of work during nine or

ten months in the year usually left him so prostrated, that perfect rest and quiet were absolutely essential. Alluding to the sad memories recalled by the month of April, so fatal in his family, he says to Dr. Cairns, "Nor have I learned the trick of cheating these recurring periods out of their power to re-awaken the past in all its gloom. An over-developed, ill-regulated imagination, is partly to blame for this, partly a worn-out, weary body, which would make me uncheerful at this season, even though I were not visited by sad remembrances. I do not encourage, but repress the dark broodings, and my southern ramble is intended to medicine this malady, and drive away the evil spirit.

"I am not, however, a materialist, blaming my body for the darkness of my spirit, and accusing the barometer because my soul is vexed and my heart sad. I rejoice to be pointed by you to the great and only sufficing source of peace and rest. My soul will be an anxious and troubled one to the end, but only in increased faith in Christ, only in closer brotherhood with Him, have I any hope of increased peace."

Frequently in spring he was so overpowered that he would scarcely speak at all, after returning home, during the whole evening; from even the nearest friends he shrank, and at such times he would say to a sister, "Let us go to some quiet place, where we shall meet no one we know." A few weeks of change of air and scene, combined with rest, gave power to rally; as he used to say, "The water was beginning again to gather in the well," and he returned to work with the buoyancy natural to him, partly restored. While absent at such times, it was his custom to write frequently to his mother to beguile her solitude. Those letters usually went by the name of "George's nonsense." A few specimens will be given occasionally. Here, for example, are one or two from Bridge of Allan:—

"*April 5th.*

"This is a most lazy place; nobody does anything but eat and sleep and lounge, and we follow the universal example. The weather is delightful; my cough reduced to a mild trumpeting; my bed no longer, like Job's, mocking me when I go to it, say-

ing, 'Thou wilt comfort me,' but folding me in its arms, and hushing me asleep. My conscience is seared or congealed, and goads me in vain to work; I reply bluntly, 'I won't work,' and win the battle. . . . All here looks balm and sunshine. I saw, to be sure, two poor fellows with legs quite naked, sitting exposed to wind and rain, and was about to say to myself, 'There is misery everywhere,' when on closer inspection I perceived that —but I don't know that they were any the warmer for that; however, it relieved my mind when I discovered—though perhaps it will not yours—that they were Highland soldiers. . . . A pair of chaffinches who have just entered on married life, *stay* opposite us in a fine airy larch-tree villa, and chat away about the babies they are looking for in a very pleasant fashion. The oldest son is to be a poet, and the oldest daughter a musician, but they had not, when our reporter left, considered a calling for the third child. You will give them your benediction."

"*April* 18*th*.

"They speak of 'the luxury of doing good,' but what is that to the luxury of doing nothing; especially when, as in the present case, doing nothing is doing good? What did I do yesterday? Nothing! The day before? Nothing! What am I doing at present? Nothing! Accordingly, a diary of my proceedings would not be very interesting, and need not be extended."

"*April* 28*th*.

"We have been giving all (no! not all, but many of) our friends drives, the money which they paid being handed over to Greybeard [a horse], who is gathering up to buy himself a gold eye-glass. Even without that elegant and useful appendage he is much admired.

"A flock of lambs in the field opposite to us have got up a racing club among them, the first meeting of which, I am sorry to say, was held on Sabbath evening. Five of them, called respectively, Lamb, Lambkin, Lambling, Lamblet, and Lammie, started for the first race, and to the delight of their admiring mothers, each was first. The conquerors were rewarded with a mouthful of cream, and then, with many tail-waggings, were

sent back to their racing. To-day the sun is sleepy, and late of showing himself, and the lambs are very quiet.

"I have some fine light reading in the shape of a ponderous MS. folio of Evidence before the House of Lords. It was sent after me, to be studied in reference to an action for compensation. I read a little of it now and then, but I am saving my brains, and leading altogether such a life as an owl in easy circumstances may be supposed to do."

"*May 5th.*

"Three weeks of idleness are now nearly ended; weeks of as sheer idleness as I ever spent; and I do not feel a bit conscience-stricken for all that. . . . Yesterday we had a delightful drive. The day was the brightest and warmest we have had. We went by out-of-the-way, picturesque roads, new ones, not afflicted with toll bars. A novel and most splendid view of the Valley of the Forth repaid Greybeard for a climb at one point. Such a panorama! I will not spoil it by trying to describe it. I felt strongly in looking at it, that it was a landscape like the one I gazed at, with prominent, marked-out hills, great mountains girdling the horizon, sunny slopes gliding down to the water-side, and a silvery stream reflecting the sky in its bosom [take a breath whilst I get a dip of ink]; it was this that made men patriots. I could not fight stoutly for the marshes I saw about Cambridge, but I would fight 'a bit' for a countryside like this. But what have I to do with fighting? Nothink! Therefore let me go on to say that we visited a colony of those lively pretty birds, the jackdaws; and that I saw a bird I never saw before, namely, a jay, a beautiful creature, prettily parti-coloured, and active on the wing. We got but a glimpse of him, for he was not sure of us."

Each spring and autumn afforded a few weeks of relaxation; but the furthest limit attained was a visit to Dublin in 1857. Continental trips were frequently planned, but as the time approached, he felt his strength unequal to the demands they were likely to make on it, and medical advisers invariably counselled the avoidance of travelling, especially by sea. Business journeys occasionally called him from home, and they were undertaken with a cheerful readiness, that trust in God alone

can give, for he well knew that each was at the risk of his life. Looking forward to one of them he says: "The thought of these travellings makes so unlocomotive a person as I startle a little. But it is a plain piece of duty, and I commend myself to Him who is equally near at all times." The danger arose from the state of his lungs, in which disease had been steadily spreading from the time of their first affection in 1843, and the liability to inflammation, while exposed to the changes of a traveller's life. A visit to London, Hampshire, and Cambridge, in 1845, afforded pleasant glimpses of rural spots, where a Scotchman sees much at variance with preconceived ideas. The religious destitution visible in many of the places visited, left a saddening impression on him. "To do something to lessen this great evil," he says, "must be my aim in all ways that present themselves. I shall return, I trust, more earnest than I was in desire and resolution to be Christ's, and His alone." Travellers always see and hear wonderful things. It was one part of his good fortune to be shown, in Salisbury Cathedral, a "gigantic old black marble baptismal font, lined with lead," which the old verger informed him had once been lined with silver, having been made "*before lead was invented.*"

Many of his holiday seasons were spent in favourite retreats at Morningside, Dirleton, Melrose, Innerleithen, or Bridge of Allan, all at convenient distances, whither he could drive in his carriage, enjoy sitting in a garden, and have many quiet pleasures. A hymn or poem was often born at such times; as, for example, in 1848, he says, "I get on with my verses. Last night, out at Morningside, where Jessie and I are keeping house, the gas would not light. Two dipped candles, stuck into bottles, proved too dim to make reading pleasant. So I fell to and chanted a lyric, which Jessie wrote down, and when it is finished I'll send it to you. It is purely a physical science rhyme, and will, I think, please you." These verses were probably those on "The Skerryvore Lighthouse," which were prompted by a perusal of Mr. Alan Stevenson's interesting narrative of its erection. He sent them to Mr. Stevenson, saying, "I have long entertained the project of writing a series of pieces on subjects connected with the physical sciences, and have already completed several." He

closes his note with a request not to name him as a poet, which, he adds, "I don't pretend to be, and my analyses would, I daresay, be discredited by some of my employers if they heard I made verses." Our space does not admit of their insertion.

A series of visits to the Crystal Palace in 1851, while the guest of his kind friends, Mr. and Mrs. Tomlinson, was a source of great enjoyment. "To me the whole was unspeakably, unutterably inspiriting, refreshing, and edifying." After quitting the "poem in glass and iron," and spending a short time with his cousin, Alexander Russell, in Hampshire, he returned home apparently better in health. It was therefore with surprise he learned from a medical friend, that at that very time a large cavity in his lungs had led the doctors to believe a few months would bring him to the grave. It healed up partially, however, and for some time hopes of permanent recovery were entertained. Here is part of a home letter during this journey :—

"MISS JEANIE,—Which am your brother, and was much pleased to hear that the painters—Mrs. M. I am sure never intended that the wax—and bored four holes in the round piece of wood—which is a new paper and much—the sermon last Sunday—at the Polytechnic—a stone heavier—and Dr. Voelcker stated that—they are not shrimps but prawns—and rose at seven o'clock. Dear Jean, such is the condition my mind is reduced to by the anxieties attendant on awaking myself, rising at seven, shaving with cold water, looking out clean shirts and collars, and other painful and harassing duties. You will too plainly see that the power of continuous thinking is gone, and that the mind wanders distressingly."

While in London in 1854, giving evidence before a Committee of the House of Commons, the death of his cousin, John Russell, after a lingering illness, made him hasten home, as once before, in 1839, to be present at the last services of love. "For all this whirling and night travelling I was to pay. The sleeping volcano in my lungs was roused from its slumbers, and the day after my return saw me prostrate in bed, with a sharp febrile attack, headache, semi-delirium, and cough. Rest, star-

vation, and a big blister, soothed the volcano to its old condition of mere muttering."

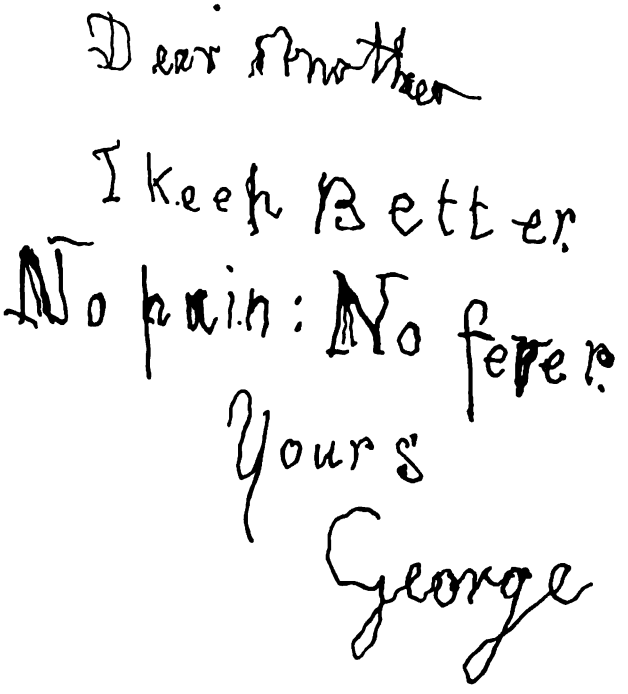
"My work in London," he tells his kind hostess, Mrs. J. H. Gladstone, "which I expected to be a mere whirl of business, turned out not only a work of great pleasure, but a period of religious refreshment such as I have not enjoyed for a very long time, and the illness I have had has deepened this, for though it was not severe, it was sufficient to remind me afresh how feeble my hold upon life is, and how ready I should be for the great change. Blessed things, too, are taught us in illness, such as health cannot teach, and I have risen from my sickbed with a subdued and grateful heart, praying to be taught to serve Christ more and better. . . . I felt it a great privilege to get back to church to-day; to hear again my own dear minister's pleasant voice; to hear our own folks sing (and famously too) our beautiful hymns, and to join in the commemoration of the death of my blessed Lord and Saviour." "It is a comfort I rarely enjoy," he adds to Dr. Cairns, "to meet Christian chemists, and the pleasure is great when those who spend much of the day burning incense before the *idola tribus et specus*, are found to devote their most sacred hours to burning incense of another kind, on another altar, to another God. It was unexpectedly, and all the more delightfully, a time of great spiritual refreshment, and I could have said, when I contrasted my expectation of a week of weary chemical hairsplitting, with the actual week of profitable religious conversation and exercises, 'God is here, and I knew it not.'"

His visit to London in May was followed by two months of work. At their close we find him saying, "I am now very jaded, and thankful to do as little as possible. This is not the season of the year when even I generally cough, but since April I have been coughing and blistering my side; and the stethoscopists talk ominously of some new quarter of my damaged lungs where mischief is threatening or begun. I have been running a race with Death since I reached my majority, and he'll have the best of it before long, if I don't get further ahead of him than I have been recently able to do. There is this difference between contending with moral and physical disease,

that every victory over the former makes you stronger for the next fight; but beaten or victorious in your battles with illness, you come off permanently weakened."

Having gone to Rothesay to recruit, he writes from it on August 26th, evidently with effort, for the letters are crooked and unshapely. "My sword-arm or pen-arm is suffering from a wicked rheumatism, which makes writing an unwelcome and rather scrawly performance, therefore my words shall be few. . . . In reply to your queries, let me say that my lungs are fairly damaged in a new quarter, and a worrying cough proclaims this, and adds to the trouble; nor can such a state of body exist without a sympathetic fever being lighted up, and vexing the whole system. It is no new condition for me to be in, and I have acquired a little experience in dealing with its annoyances. There are two good symptoms: I eat like a man who has a living body; and I have a very composed spirit, unless when fretted by the talk of others. To be alone, or only with Jessie, as I am here, is the pleasantest condition of matters, according to my present mood." Often had his hopes of improvement in health been met by days and nights even more wearisome, being allotted to him. So was it to be now. About a fortnight had been spent in Rothesay, when one morning, seeing a strange fish lying on the beach, he dropped down the low embankment which separated him from it. Endeavouring to guard against the fall which his lameness might have caused, he overstrained the right arm, and broke the bone near the shoulder. Among strangers, and in lodgings far from comfortable, the accident was doubly distressing; but his quiet calmness and gentle patience failed not. Kindness was received from unexpected quarters, and his friends, as usual, showed devoted love. One of them, Dr. John Struthers, no sooner heard of the accident than he started for Rothesay, to satisfy himself that the arm was properly set, and having spent an hour, was obliged to return home. With George the anxiety was to spare all possible distress to absent friends. "I lay," he wrote afterwards, "through the long nights, with a weary cough, a lost vacation, and a shattered frame, intensely realizing how much sorrow Jessie, mother, and uncle, were enduring for me." To his mother he dictated a letter the

day after the accident. "Nothing but my right arm, being the disabled one, keeps me from writing to you myself to assure you I am very well. I trust you will not distress yourself with the thought that I deserve any great amount of compassion or sympathy. I deserve, indeed, rather a severe reproof for my inconsiderateness in allowing a queer fish to tempt me to forget that I was not so good at clambering over walls as formerly. As we shall soon be with you, and will write every day, I hope you will not allow this accident to discompose you. I shall be up walking in a couple of days, and will probably be in general health all the better that I shall be utterly unable for a week or two to make use of my pen hand." The following day his filial love showed itself in an attempt to use his left hand. Here is the result:—



Bulletins continued to follow, written with the left hand, and showing great improvement in the penmanship, though necessarily laconic in style.

"DEAR MOTHER,—I hope to be with you in a week. To-morrow I shall send you some verses I made to help me through the night. They are nothing particular."

The verses were the following:—

CAMERA OBSCURA.

Silent, dimly-lighted chamber,
Where the sick man lies,
Death and Life are keenly fighting
For the doubtful prize,
While strange visions pass before
His unslumbering eyes.

Few of free will cross thy threshold;
No one longs to linger there;
Gloomy are thy walls and portal;
Dreariness is in the air;
Pain is holding there high revel,
Waited on by Fear and Care.

Yet, thou dimly-lighted chamber,
From thy depths, I ween,
Things on earth, and things in heaven,
Better far are seen,
Than in brightest broad daylight
They have often been.

Thou art like a mine deep sunken
Far beneath the earth and sky,
From the shaft of which, upgazing,
Weary workers can descry,
Even when those on earth see nothing,
Great stars shining bright on high.

So within thy dark recesses,
Clothèd in his robes of white,
To the sufferer Christ appeareth
In a new and blessed light,
Which the glare of day outshining
Hid from his unshaded sight.

Silent, dimly-lighted chamber,
Like the living eye,
If thou wert not dark, no vision
Could be had of things on high;
By the untempered daylight blinded,
With closed eyelids we should lie.

Oh my God! light up each chamber
Where a sufferer lies,
By thine own eternal glory,
Tempered for those tearful eyes,
As it comes from Him reflected
Who was once the sacrifice.

After returning home some weeks later, he writes to Dr. Cairns "a *few* lines, for my arm is still very stiff, and aches with a little work, to thank you for your kindness, not in formal words, but none the less with a grateful heart. I hope I have learned something more of God's judgments and mercies than I ever knew before. I went to Rothesay in a humbled spirit, craving most of all rest, and seeking to spend a season of exhaustion and enforced quietude in self-examination and submission to God. In this spirit the trial He sent came not as something strange, but as if it fitted into the daily discipline of the life I was leading. And now I look back on the last two months with a more lowly, chastened, and grateful heart than I felt towards my Saviour before, and desire more than ever to confide in Him." "I got great good," he says to Mr. Macmillan, "from the long, quiet, and often sleepless hours. How soon, alas! the whirl of business banishes the thoughts that were so welcome in the silence and lowliness of sickness! How difficult it is to live to Christ in the struggle of daily contention, and to keep one's-self unspotted from the world!"

Among the friends made by George wherever he went, were little girls from the age of two years upwards. He was a great favourite with them, and promised to marry several when they got the height of his stick. The courtship was chiefly carried on by an exchange of valentines each year, and it *did* prove a little inconvenient when the young ladies had come so far to years of discretion as to be found taking private measurements of the stick, by which their fitness for matrimony was to be tested. His interest in the children of his relatives and friends was great. While in London in 1854, he spent a night in the house of a fellow-chemist, being almost a stranger to his hostess. Next morning, entering the drawing-room, where she happened to be alone, he said, on bidding her farewell, "Whenever I receive kindness and hospitality from friends who have families, I make a point of remembering their children in my prayers. Yours will be so remembered henceforth." To one of his little brides a tender interest attaches, as the subjoined memoranda show:—

"In the island of Arran, in the summer of 1852, it was our

privilege to have George Wilson for a day or two as our guest. We had not known him previously; but, as was his wont, he glided at once into the warmest corner of our hearts, and ever after kept his place. The secret of his influence was love, and the knowledge that even in its happy interchange 'it is more blessed to give than to receive.'

"He was especially attracted by our little Lucy, a child of four years, whose winning ways and bright intelligence delighted and surprised him. She met his advances cordially, and from that time he always called her his betrothed.

"The intellect, then prematurely developed, continued to brighten and apparently to strengthen, for a year or two, culminated at the age of six, and then, under the clouding influence of brain disease, waned gradually, and before dear Lucy had attained her seventh birthday, had touched the western horizon, where, though speechless, it still faintly glimmers, and where we trust it will continue to do so, till it sinks into the light of heaven.

"George Wilson, as all who knew him will readily believe, became ever more and more tenderly interested in his afflicted bride; and we do not think that any more striking evidence could be presented, at once of the deep humanity of his nature, and of the spirituality which through grace he had attained, than the following quotation from a letter which he wrote after hearing read some memoranda which had been made by a faithful attendant of poor Lucy, of sayings well worthy to be remembered:"—

"*May* 16, 1859.

"I was deeply touched by the memorials of dear, gentle, blessed Lucy, you read me to-day, but had not the courage to ask you for a copy. To-night, however, on trying to recall her words, I find I can do so very imperfectly, and I would feel deeply grateful if you granted me a transcript. It should be very sacred in my eyes. Lucy is to me so truly an object of affection, and now, in addition, so much an example of the blessed Saviour's special love, that I would very highly prize what I ask. Unless you have a great objection, do grant this desire of my heart.

"I deeply sympathise with you both in the anguish which such a trial must beget: but with a happy issue out of her great affliction so certainly and, please God, so unremotely awaiting dear Lucy, I do not wonder that you bow in unrepining submission to Him who doeth all things well.

"And when we consider that each of us, in the depth of even natural sleep, is as helpless as your silent sufferer when in the grasp of her malady; and further, that there is certainly much less physical agony than from the movements of the limbs we infer there must be, we may surely think that to be with Christ as Lucy, spite of her bonds, even now is, is 'far better' than to enjoy the soundest unblessed slumbers, which shut out not only the world, but the very sense of God, from hundreds who never suffered a brief pang.

"We may yet find that He who has told us that the first shall be last and the last first, has been peculiarly overflowing in revelations of His goodness and mercy to those who, like dear Lucy, seemed to the thoughtless left alone.

"And how cheering is the assurance that the Holy Ghost 'intercedeth for us with groanings which cannot be uttered.' Her inarticulate sighs are translated by the Advocate with the Father into prevailing prayers, and, presented by Him, we know how they will be answered.--Yours very affectionately,

"GEORGE WILSON."

One is often tempted, in looking at the many-sided mystery of suffering, to come to the conclusion that some are set apart, not only for their own profit, but as unconsciously teachers of others, setting forth the causes, the uses, and the results of affliction. In George Wilson's life we can even now see the wisdom of God's dealings, in this point of view, with regard to him; much more shall we rejoicingly see it when that which is in part shall be done away.

His wonderful recovery, time after time, from severe illnesses, evinced an amount of vitality which was scarcely looked for in his apparently feeble frame. Again and again did his medical friends look on him as almost brought back from the grave; yet there he was, claiming no compassion, and bravely doing a

strong man's work in the world. It cannot be doubted that ever after his experiences of 1843, the perfect calm and serenity of his mind gave the body every chance in its favour.

To his fellow-men "the personal feebleness of the genial presence" made him all the dearer. A tender reverence usually marked their intercourse with him, though of this he seemed unconscious, having much of that simplicity of character retained by few beyond the years of childhood, and which possesses a nameless charm when united to full-grown powers of heart and mind. The impression made on his kind hostess, while visiting London in 1851, may perhaps better convey to others a realization of his bearing in general society than a lengthened description could furnish. "The very first impression, preceding all others, was wonder at the *life* that was in him. I had been prepared to see an invalid; a man whose constitution had been severely tried, and whose health was at that time very precarious. His letters had previously made us acquainted with his genial nature; but although we anticipated many gleams of the same humorous and kindly spirit in his conversation, yet we naturally expected hours of lassitude and seasons of depression in one who had suffered so much, and was still suffering.

"And when he came among us, there was nothing in his external appearance to destroy the impression. An invalid, physically speaking, he certainly was; the marks of weakness were on him, and the very texture of his small hand betrayed unusual delicacy. I almost trembled at the thought of such a man being exposed to the excitement and fatigue of London at that busy time. I expected day after day to see him return from the Great Exhibition thoroughly worn out and exhausted in body and mind. But no; the spring and elasticity of his nature were such that he never seemed tired. From morning to night, abroad or at home, the same cheery spirit possessed him, the same wonderful *readiness* for everything which presented itself. If he felt fatigue, he never showed it in any other way than by keeping quietly in an arm-chair after his return from the Exhibition, but even then he had not the attitude of

one taking rest; but the lively, playful, emotional manner of a man thoroughly refreshed and at ease.

"The life that was in him seemed to triumph over all bodily infirmities; it gushed out in kindly thoughts and words, and happy turns of expression, which enlivened all around him. There were those present during his visit who had endured recent and severe affliction, yet they never found anything discordant in his mirth; it was so genial, so tender of the infirmity of others; so considerate and forbearing towards all mankind. And this life which was in him manifested itself not only to those who could appreciate it fully, and who could admire the aptitude of his illustrations, and the quaint humour of his retorts; but it was poured out freely and generously on others, who must have been less sensible of its value; on young persons and children; nay, even on domestic animals, who came in for a share of his friendly talk, and looked as if they understood it."

To those unstrung by broken health and the depression almost invariably resulting from it, he was so often held up as an evidence of how much of life's best blessings might yet remain for all who had power to lay hold of them, that it was sometimes laughingly suggested to him that his peculiar "mission" in this world was to comfort invalids. But not only negatively did he effect this; his sympathy with sufferers was such as to make any sacrifice for them a pleasure; and no consolatory letters or sickbed visits were ever more welcome than his.

Looking at this phase of his life, we cannot but be struck with the gratitude which each attack of illness brings out more and more fully. His nature having once been brought into harmony with God's, he is able, with heaven-taught eye, to see how immeasurably greater is the spiritual gain than the temporal loss. His medical knowledge made him fully aware that, step by step, he was steadily approaching the dark valley; yet it never seemed to lessen his interest in earthly things, or curtail the plans for work in every department, for which a long lifetime could scarcely have sufficed. The only deception he ever practised was that of concealing from those whose affec-

tions were bound up in him, his knowledge of the state of his health. So skilfully was this done, that, while themselves keenly watching every change, and hoping against hope, they believed him unconscious of much that filled them with harassing anxiety, and not till after all his sorrows were over did they learn from letters to others, that to him all had been as an open book. It is needless to add, that no small amount of self-denial and self-command were called for in carrying out this affectionate purpose.

"Could I escape exposure to cold and fumes and much talking," he says, "I should do very well; but my calling is not a very helpful one to damaged lungs, and I am not without unwonted anxieties concerning the winter." "God's will be done. If His chastening hand is to be laid again upon me, His sanctifying Spirit will be sent also, and He who suffered for me will help me to suffer." While in bed from a severe attack of local inflammation, with high fever and great pain, he writes to Dr. Cairns: "I have gathered spiritual instruction from this lesson, and could enlarge thereon, but the flesh is weak. God's mercies are truly as overwhelmingly great as they are altogether undeserved;" and a few days later he says:—

"DEAR JOHN,—'I sing the sofa,' *i.e.*, I write from it, a great step towards convalescence. I begin with this fact, which I beg you will communicate to the H— and J— families. It is downright dishonesty and cruelty to permit others to expend on our sufferings more sympathy than they deserve. Let, therefore, these good people be notified that now I am so well, that if they utter any expressions concerning me, it must be those of thanksgiving. . . . How different the thoughts of health and illness are! One thing especially is impressed on me by every successive attack of the latter. I refer to the feeling that one must despair of building up a firm faith in Christ in the great majority of cases of sickness, if it is all to do from the very foundation, and the disease is in any way rapid or mortal. If your objective experience is at all like my subjective one, you will earnestly warn all against deathbed repentances. In pro-

bably two-thirds, at least one-half, of the cases of fatal illness, before alarm is felt, pain—or what is far worse, unless the agony be tremendous, sickness—has prostrated the intellect, and clogged or maddened every emotion. Consecutive thought is impossible; meditation, reflection, or even distinct apprehension, greatly weakened; often out of the question. Who dare expect in such circumstances that the long-despised mercy of God shall be experienced, when the very power to listen to a verse of the Bible, or to understand it, is gone, and memory is palsied; or, worst of all, has no promise to remember, or one stay or rock of strength to fall back upon? God's mercy is infinite, and reacheth to the eleventh hour, and is often glorified and manifested at it. Yet, beseech your young people to commit, commit, commit to memory the Bible. They'll find the precious comfort of it when sickness comes. And the elders will see that the 'hope set before them' is so realized in health that it shall only require to be 'laid hold of' when sickness comes. To attain unto this is to be, with the Holy Spirit's help, far more the great object of my life than it has hitherto been. The review of the last three weeks shows such abounding mercies, favours, love—my cup literally running over with them—that the pain, disappointment, fear, and discomfort, have passed into the background already, desponder though I am." A year later he tells the same friend: "I am leading the very quietest of lives, and yet it is as happy as when I was busier. I am broken in to an indoor existence, and do not feel that trouble in getting through the day that active men must feel when first reduced to draw coal waggons at a mile an hour, instead of being special engines at a mile a minute. And though I have no progress to report in the way of bettered health, but the opposite, and begin seriously to contemplate the great possibility of having to submit to an ugly operation, yet the pain I suffer is quite bearable, my intellect is clear, and there are many more mercies than miseries in my cup. Do not whisper or hint to any one about the possibility of an operation being necessary. It might reach the folks here and terribly distress them. The thing may not be necessary, and need not therefore be talked about. I speak of it to you that you may

know my stand-point, which I cannot explain to many people, who wonder they do not see me at church, although they know that I am able to lecture.

"I turn from the self-magnifying morbid introversions of an invalid, to something much safer for me, and more interesting to both of us. I think I have been able to live nearer to God during the last three months than I have ever done before. He has granted me a greater share of faith and patience than I have enjoyed previously; a deeper sense of brotherhood with Christ Jesus, and of communion with the good Spirit. I am graver than I have often been, but I have a joy and peace in believing, which I would not exchange for the lightness of spirits that has often fallen to my share."

"*March* 1850.

"I have been in the house all to-day and yesterday, confined with a cold which this ungenial weather was certain to distribute to me among its other recipients, as one sure to give it suitable accommodation and some days' lodging. I have only once been absent from church this winter, a great cause of thankfulness; and my health in general has been very fair this year. . . .

"You tell me I show less vivacity than I once did, and you are not wrong; but the change noway discontents me. The last two years have greatly sobered me, and my life between twenty and thirty seems now to me a scarcely intelligible and very sorry drama, to be repented and made better without any delay. I met this day-week a lady whom I have not seen since I was some seventeen, nor was there anything to bridge over the long space between our two meetings. It has set me to meditate a great deal, this glimpse of myself at seventeen, with all that filled the years onwards to thirty-two obliterated; and I realize better than I might otherwise have done, what a changed being I am. I lament not the loss of my vivacity, for I had more than enough of that volatile ingredient, and can well afford to let some of it evaporate. One thing, however, does alarm me, the fear, namely, lest I should settle down into a sombre, prosaic mortal, leading a dawdling, semi-valetudinarian, coddling life,

which were worse even than the alternate and unequal rises and falls of my youthful, wayward moods. The fires of my heart, which once blazed, are all burned out, or deliberately extinguished; and without making vows, which would be foolish and even sinful, I feel every day the circle of my imaginative rovings shorten its diameter, and the thirst of my earlier ambition cease, although, like the thirst of a fever-patient, it has never been slaked. All this is well, if the empty heart be filled by Him who should from the first have been its occupant; but I have seen in others, and I fear in myself, an exchange of dissipation of mind for unprofitable idleness, and this the more that my mode of life carries me out of the busy current, in which I formerly at least struggled to swim, and my health has embayed me in a side pool, little influenced by the tide."

The various effects of affliction he expresses to Daniel Macmillan in these words:—"The furnace of affliction puffs away some men in black smoke, and hardens others into useless slags, and melts a few into clear glass. May it refine us into gold seven times purified, ready to be fashioned into vessels for the Master's use." Expecting a visit from this friend in 1850, he tells him, "I am reputed to be much graver than I was, but when not in sickness or pain there are lots of fun in me yet." After the visit was past, he laments the inability to enjoy his friend's society, for "those two demons, rheumatism and dyspepsia, had gone shares for my poor body, and I was ill at ease. Night after night I spend in prosecuting a discovery, the steps of which are, that I awake in pain on one side, and after a period of vague uneasiness, say sleepily to myself, 'It is the other side on which you sleep quietly,' and so I turn to the other side, and after three minutes find out I was mistaken, and that it was the other side, and the other follows the other, till uneasy slumber puts an end to the unceasing revolutions. One is poor company after such nights; but I hope when I next see you I shall be reasonably well."

The humorous way in which his illnesses were frequently mentioned, could not fail to provoke a smile even from the most tenderly sympathizing. One or two specimens must suffice. "I have not, like some unhappy people, an aching

void, but an aching *plenum, i.e.*, I am full of aches. I might quote, as suitable to my case, the words of the beautiful Scotch song, 'I leaned my back against an aik,' only modernizing the last word into ache, as of course it should be." Being unable to join a proposed excursion, he explains the reason: "To tell you the truth, I have been for some time tired of lecturing behind a table (like a shopman selling goods over a counter), and I thought I should like to try Curtain Lectures for a change. Accordingly, I took care to catch a cold, and fell to coffin, and finally betook myself to bed the night before last, and as the curtain course is not yet finished, I remain there still, lecturing to a very attentive, sympathizing, and appreciating audience, consisting of my bedfellow *Grim*, who looks upon coughing as a kind of barking, and thinks it quite in his way." In allusion to what he had suffered at the hands of surgeons, he sometimes spoke of himself as "copiously illustrated with cuts."

His sister Jeanie is told, "Give a rap on the table when you get this (that's the way spirits take to communicate thought), and venerate the postman who gave two (was it?) raps when he handed it in.

"I have been vexed with the cares that belong to a landlord. Into an apartment in my possession, which I intended to shut up, indeed to fill up, a rogue found his way, bent on making, not paying a rent. He would not pay the taxes; on the other hand, he taxed me. He would not rest even at night, but compelled me to get up at any hour to look after him. I besought him at least not to disturb me during lecture, but the rogue declared that he hated fumes, and would interrupt me in the midst of the most angelic eloquence. His Christian name I don't know (indeed he is not a Christian). His surname is *Bronkeetis*. He comes of an old family, and cheats people into the notion that cough is a simple word, which will get simpler by use, as at last it does by changing its spelling, and ending in coffin. People don't like to spell it that way, but all the folks who begin with coughing as the right fashion, end with the other version of it. The Homœopathists, for example, advise the administration to sick people of cocoa, because they

are afraid to recommend coughy, which the honest grocers spell coffee." At another time he speaks of his "everlasting cough, a Malakhoff which neither French nor English are likely to take."[1] A coughing performance, in which he is engaged at intervals, through the night as well as day, "excites," he says, "so much applause, that it is invariably encored."

Excitable temperaments like his cannot but have times of depression, but these he concealed so well that they were often unsuspected. "Cheer up, my good friend," he replies to a desponding letter, "I can say, '*De profundis clamavi;*' I look back with great horror at some of the dark and dreary images which an overworked brain doomed me to have for daily and nightly visitants, for weeks together, since Christmas onwards. Only now [in April] is the heaving black sea of gloom beginning to smooth its waves, and the horror of great darkness to pass away. The fault lies in great part with the body, and that I hope to mend by a week in the country." "My roving fancy," he tells John Cairns, "is ever building castles in the air, or digging dungeons in the nether depths. Well! well! there is a cure even for that, and for the benefit of poor dreamers like me it has been written, that 'neither height nor depth' shall be able to separate us from the love of God in Christ Jesus our Lord. You need not tell me I am wrong in my exegesis; if I were right, I should not say it to such a dweller in the Interpreter's house as you. But I am right, so far as regards myself, at this present moment."

The two letters which follow are given nearly entire, the first being addressed to a literary friend, and the second to Mr. Daniel Macmillan :- -

"It is always difficult to write to a distant friend, for one cannot know but very generally how he is, and the tone of a letter may be all out of keeping with his condition.

"A strong feeling of this makes me reluctant to write this evening, for I remember too well my own risings and fallings, and wayward changes when ill, to be at all confident that I can say anything that will be acceptable to you. Yet if I should

[1] Written during the siege of Sebastopol, with its Malakhoff tower yet unattacked.

fail, you will give me credit I know for good intent, and I will on my side lay claim to a deep and sincere affection for you. One thing has struck me when ill myself, and when visiting others who were ill, viz., what depths there are in every human heart, which only God can fill! How impossible it is to find words in which to express to others some of the thoughts which stir our souls most. A remembrance of this gives me a very humble impression of what I can do for another spirit on whom affliction is laid, and makes me rather look to Him who in all the afflictions of His people is afflicted, and who, inasmuch as He hath suffered being tempted, is able to succour us when we are tempted.

"Were I beside you, so that we could speak together, we should soon know each other as we are, and have open frank communion together. As it is, to write is to draw the bow at a venture, and perhaps send the arrow wide of the mark.

"I shall do no more, accordingly, in this letter, than send you affectionate good wishes. After making twice over such a recovery from the severest inflammation of the eyes as I did, although my constitution is so bad a one, far, far worse than yours, so bad indeed that no Office will insure my life, I look forward to news of your betterness with cheerful hope; and strongly feeling that I helped to overtask your eyes by the demands which the Life of Cavendish made upon them, I also look forward to your sending me some work to do for you, whilst your eyes are resting for the future labours which the great Taskmaster has in store for them. And although out of our own works we shall never get contentment, and ought not, if our standard is a high one, it is assuredly a blessed reflection that God has given us grace to think of Him in what we have done as authors, and that however imperfectly we have laboured to honour Him and serve our fellows, He has not left us without some token that He has approved our work.

"May He give us more and higher work to do for Him, and as a preparation for it, subdue our wills to His, and make us like our blessed Saviour. I have a poor cousin dying, and the spectacle of his sufferings has made me stop fretting over lesser pangs, which seemed less than nothing compared with his. The

great mystery of suffering in a world so beautiful, and orderly, and full of law as this, we shall never understand on this side the grave, and personal suffering ever brings back the problem in all its insolubility, to tempt the aching heart to aim at its solution again. But for all practical ends there is an adequate solution of the great mystery in the fact that the Lord Jesus Christ himself suffered as none of His people are called to do. I cannot always think of the Saviour's sufferings. They are too awful for aught but very solemn meditation. The Roman Catholics and Methodists alike cultivate a mode of referring to the agonies which Christ endured, which I shrink from, although I do not doubt that many of both retain a most reverential feeling for the Lord.

"But in periods of great sorrow and suffering, the thought that a holy, sinless, perfect man, was the subject of a lifetime of trial, wound up by a death of the most painful kind, and this with His own consent, and by the appointment of God the Father, comes home to my heart as a warning against being perplexed overmuch with the mystery of suffering when it is laid upon myself. And when to this thought is added the other, that this great sufferer was Himself God, I feel that fully to realize this truth is the surest way of preventing that eating of one's own heart, which, when ill and sad, we are all so prone to do."

"It is not about B—— I am going to write. This is Sabbath evening, and I desire to think of other things; and most of all to sympathize with you in your present sorrow. Think not that I despise tears, or count them unmanly. If I said once that I did not weep, it was to explain an allusion in a verse, not to parade the fact or to boast of it.

"Weeping, or not weeping, is neither here nor there as a sign of courage or the want of it. It is dependent in great part on a man's physical make, and the action of a little gland. When I am prostrated my mind eats inwards, and broods in morbid silence and gloom. Tears would be a relief, but they will not come. I would be thankful if they did, and take no credit that they do not.

"I can, I think, altogether sympathize with you, in the great

reluctance with which you must have left Cambridge just when a new term was beginning. When one is exceedingly ill, one is engrossed with the calamity which compels everything to yield to it: and when well, how much there is to do! But to be neither very ill nor very well; to have a certain fitness for work, and conviction of its importance, and yet no sustaining relish or enduring capacity for it, this is a sore trial of faith and patience, as months of its endurance have again taught me.

"Yet I am sure such seasons will often, with God's blessing, teach us what exulting health and terrible agony cannot, and are as needful to ripen many of us for another world, as a cup running over with mercies, or sharp strokes of affliction. Great torture is not only maddening, but enslaving; it makes the mind reel, and fills the heart with terror. Full health is self-reliant, God-forgetting, and unheeding. A dreary season, such as you see before you, often permits a more profitable study of God, and carries us farther forward in the Divine life, than the extremes of ill-health or its opposite will do.

"I do not overlook, in saying this, that the moral regimen suitable for one mind will not serve another, and that what profited me may not benefit you. I have nothing but my own experience to speak certainly from; but, after all, we are of like passions and infirmities, and will be more or less affected in the same way by the same causes.

"Neither do I forget that a mind unstrung for secular study, is enfeebled for religious work also. How often have I this summer felt a mean childish gladness, that the chapter to be read was a short one; and been as apathetic as if there were neither God nor devil in the universe.

"Nevertheless, we have a promise of the Holy Spirit's help in our religious work, which, as it is supernatural in nature and source, is not at the mercy of sickness. It does not, in reference to this, at all matter what theological theory we hold as to inspiration. We both believe that one of the good gifts which Christ's death procured for us, is the sanctifying presence of the Holy Ghost in our hearts. We cannot distinguish His workings from those of our own spirits, yet we can believe that where it may please God to cut us off from relish and capacity for

the ordinary affairs of life, He may yet increase our spiritual powers, and teach us more of His 'deep things,' and make us liker Himself. The incapacity, indeed, in the one direction may be a provision for greater endowment in the other, and the shadow which ill health casts over the soul is often the most befitting background, and lets us realize best, by the contrast, the presence and the brightness of the 'Light of Life.'

"I have been preaching to myself all this while, and thinking through my pen. I have said nothing that you do not know. It would be a sad thing for us if we had to indulge in novelties. But I know how thankful I am to get a hint from a religious friend, though he should but repeat a verse I had been reading the moment before. To me the prayer of the humblest Christian, however defective he may be in other gifts and graces than those which God grants to the weakest brethren, is always comforting and refreshing; and it brings you and me closer than railways could if we can rejoice together, as having 'one faith, one Lord, one baptism.' You please me much with what you say of the hymn. It is not the expression of unfelt or put on emotion, nor does it pretend to be poetry. Before I die I hope to gather together a set of hymns for the sick-room, and if I don't live long enough to accomplish this, I can comfort myself with the thought that there is abundance already.

"And now I will trouble you no further. Your namesake, the prophet, was in a den of lions, and God shut their mouths. Yours is a trial of an opposite kind, for the den and the lions are in you. Their mouths can be shut by God also, and I pray that they may. I never can cease admiring that beautiful request of the Prayer-book, 'A happy issue out of all their affliction.' It is so humble, so undictating to God, so moderate, yet so ample. God give that to us both. Amen. In His way and time, and in this world and in the next. . . .

"To be well enough to work is the wish of my natural heart; but if that may not be, I know that 'they also serve who only stand and wait.' God will not require healthy men's labour from you or me; and if we are poor in power and opportunity to serve Him, our widow's mite will weigh against the gold ingots of His chosen apostles.

"I am sure we all pray too little, and trust God too little; but the topic is inexhaustible."

We cannot be certain which hymn is spoken of in the preceding letter. Not a few were 'Songs in the night,' and are memorials of times of more than ordinary suffering. In ignorance of the special one alluded to, we shall give 'A Hymn for the Sick-room,' the soothing balm of which has been gladly welcomed by other sufferers :—

Sufferer, lift thy weary eye!
Help is with thee, Christ is nigh;
God regards thee from on high.

All thy groans go up as prayers,
Through the Spirit's interceding;
Each unworded murmur wears,
At God's throne, the air of pleading;
And in all thy woes He shares,
Who was once the Victim bleeding.

Though He is, and was, all sinless,
He remembers mortal pain;
Holy though He is, and stainless,
On His form the scars remain,
And He looketh now, though painless,
Like a Lamb that hath been slain.

He is not a great High Priest
In all sympathy deficient,
From all human things released,
For Himself in all sufficient;
To be man He hath not ceased,
Though He is, as God, omniscient.

All thy bed, in all thy sickness,
He will make with His kind hands;
All thy fainting, fears, and weakness,
Anxious thoughts, and fond demands,
All thy patience, faith, and meekness,
Reach Him where on high He stands.

Faint not, then! God ever listeneth,
Answereth ere the cry is sent;
Whom He loveth, those He chasteneth,
Taketh what He only lent;
For Himself our ripening hasteneth
By His sorest punishment.

CHAPTER X.

THE SCOTTISH INDUSTRIAL MUSEUM, AND THE CHAIR OF TECHNOLOGY.

"I doubt my body
Will hardly serve me through: while I have laboured
It has decayed; and now that I demand
Its best assistance, it will crumble fast."

PARACELSUS.

THE Session of 1854-55 was begun with gloomy anticipations as to health. "My lungs are not what they should be; and the only thing that could do them good, rest, I cannot get. I have large classes this winter, and must do all I can for them. I leave the issue in the hands of God, for I cannot help myself, nor does any outlet appear." Intelligence received then of the death of several relatives and much-loved friends, fell heavily on him, when less able physically to bear the shock. Amongst these was Professor Edward Forbes, who but a few months before had entered on the duties of the Natural History Chair in the Edinburgh University. His welcome by his old student friends was of the warmest, and unbounded hopes of the new career opening to him, and to the University through him, filled the hearts of all. In the summer of 1854 he gave a short course of lectures, and was entering upon his first winter session, when a few days of suffering carried him off. On the 24th of November, George writes to his brother:—"I have very sad news to communicate. Edward Forbes died last Saturday, after a short and painful illness, and I can convey to you no adequate idea of

the sadness and dismay with which his unlooked-for death has filled us. . . . He was a man of genius, and united to it so much good sense, prudence, discretion, kindliness, gentleness, and geniality, that he was very largely and widely honoured and loved. I loved him far better than I ever told him; but he credited me, I believe, with great affection. To myself the loss is irreparable. Short-sighted mortals that we are, he and I had been arranging all sorts of conjoint labours, and this is the end of it! With nearly every one there is the feeling that he was taken away, not from the evil to come, but from the good that he would have done." That Edward Forbes reciprocated this admiration may be gathered from his saying of George Wilson, —"How sad to see so splendid a jewel in such a shattered casket!" To Dr. Cairns, George speaks of the loss as a great personal grief. "His death takes another idol away." While to another he writes, "I feel as if all the brave and young and fair were dying, and a mere wreck like me allowed to float on. Let us not, however, my dear friend, think of satisfying God by our works. I try to live as a dying man (which I am), with faith in a living Saviour, whose finished work leaves me nothing to do in the way of meritorious labour, though it lays on me the greatest obligation to work for Him and do His will. It is a blessed thing to know Christ, as one not ashamed to count the meanest of us His brethren, who has promised to exalt us to a share in His glory, and invites us all to come unto Him and find rest. He is a far more gracious Master to us than any of us are to ourselves, and His service is perfect freedom."

His cousin, Alexander, had lost a boy of five years on the passage out to Australia; he died in sight of land, and the first possession of his parents in the new country was a little grave. His beauty and winning ways had made Harry deeply loved by all who knew him and his death was regarded as no common loss. On learning his bereavement, George writes to the sorrowing father:—"Scarcely am I home from Rothesay before we are all startled by the unlooked-for decease of my young, brave, frank, and skilled colleague, Dr. Richard Mackenzie, who had volunteered to accompany the troops to the East, and perishes of cholera after winning the utmost esteem and gratitude

of the Highland soldiers, and risking his life at the battle of the Alma. The shock of that is scarcely past, before we are plunged into new and deeper grief by the death, after a very short illness, of Edward Forbes, in the very height of his glory and usefulness; and I am in tears for the loss of that beloved friend, when your letter arrives with its afflicting news. . . . I have given up making idols; they are all taken away. Harry I thought of as full of life and energy; and destined, with that remarkable mechanical genius of his, to become great, and good, and famous, long, long after I had found rest in the grave. He was so beautiful—the most beautiful boy I ever saw—so loving, so lovable, what had Death to do with him? Was I not here and others, who had digged for death as for hidden treasure, and could even rejoice at the prospect of going to be with Christ, which for us is far better than a dying life here: that he should be summoned and we left! I have asked myself the same question regarding the death of Mackenzie, and still more regarding the loss of Edward Forbes, whose death is universally felt to be a public calamity. But I can find no answer, and expect none on this side the grave. I am learning, I hope, more and more to trust God, and to put faith in Christ; and to leave these, and a thousand other black mysteries to be explained, if God please, hereafter, and if it does not so please him, to be left unexplained."

"I have agreed very reluctantly," he tells his brother Daniel, "to write Edward Forbes's life. I have been so importuned to become his biographer, that I have assented. I loved him very dearly, and knew him well, and the task is in that respect very welcome; but I had labours of my own to work out which must be put aside.[1] I enclose some verses on his loss, which embody two ideas of his own applied to plants and animals." The verses alluded to appeared in 'Blackwood's Magazine' for March 1855, with a short explanatory preface:—

[1] "I hope I shall live to write Edward Forbes's Life," is an expression in a letter about this date. But this hope was only partly fulfilled. The amount of labour demanded from him by the duties of the subsequent years, left almost no leisure for literary work. Every attempt was made to get on with it, but at his death it was left unfinished. Arrangements have been made, however, for its early completion, and we trust it will very shortly be given to the public.

"The lines seek to apply, *mutatis mutandis*, to the mystery of the great Naturalist's death, certain canons which he enforced in reference to the existence of living things, both plants and animals. Their purport was, to teach that an individual plant or animal cannot be understood, so far as the full significance of its life and death is concerned, by a study merely of itself; but that it requires to be considered in connexion with the variations in form, structure, character, and deportment, exhibited by the contemporary members of its species spread to a greater or less extent over the entire globe; and by the ancestors of itself, and of those contemporary individuals throughout the whole period which has elapsed since the species was created.

"He further held, that the many animal and vegetable tribes or races (species) which once flourished, but have now totally perished, did not die because a 'germ of death' had from the first been present in each, but suffered extinction in consequence of the great geologic changes which the earth had undergone, such as have changed tropical into arctic climates, land into sea, and sea into land, rendering their existence impossible. Each species, itself an aggregate of mortal individuals, came thus from the hands of God, inherently immortal; and when He saw fit to remove it, it was slain through the intervention of such changes; and replaced by another. The longevity, accordingly, of the existing races can, according to this view, be determined (in so far as it admits of human determination at all) only by a study of the physical alterations which await the globe; and every organism has thus, through its connexion with the brethren of its species, a retrospective and prospective history, which must be studied by the naturalist who seeks fully to account even for its present condition and fate.

"Those canons were applied by Edward Forbes to the humbler creatures; he was unfailing in urging that the destinies of man are guided by other laws, having reference to his possession individually of an immaterial and immortal spirit.

"The following lines, embodying these ideas, contemplate his death, solely as it was a loss to his fellow-workers left behind him; their aim is to whisper patience, not to enforce consolation:"—

THOU Child of genius! None who saw
The beauty of thy kindly face,
Or watched those wondrous fingers draw
Unending forms of life and grace,
Or heard thine earnest utterance trace
The links of some majestic law,
But felt that thou by God wert sent
Amongst us for our betterment.

And yet He called thee in thy prime,
Summoned thee in the very hour
When unto us it seemed that Time
Had ripened every manly power:
And thou, who hadst through sun and shower,
On many a shore, in many a clime,
Gathered from air, and earth, and sky,
Their hidden truths, wert called to die.

We went about in blank dismay,
We murmured at God's sovereign will;
We asked why thou wert taken away,
Whose place no one of us could fill:
Our throbbing hearts would not be still;
Our bitter tears we could not stay:
We asked, but could no answer find;
And strove in vain to be resigned.

When, lo! from out the Silent Land,
Our faithless murmurs to rebuke,
In answer to our vain demand
Thy solemn Spirit seemed to look;
And pointing to a shining book,
That opened in thy shadowy hand,
Bade us regard those words, which light
Not of this world, made clear and bright:—

"If as on earth I learned full well,
Thou canst not tell the reason why
The lowliest moss or smallest shell
Is called to live, or called to die,
Till thou with searching, patient eye
Through ages more than man can tell,
Hast traced its history back in Time
And over Space, from clime to clime;

"If all the shells the tempests send,
As I have ever loved to teach;
And all the creeping things that wend
Their way along the sandy beach,
Have pedigrees that backward reach,
Till in forgotten Time they end;
And may as tribes for ages more,
As if immortal, strew the shore;

"If all *its* Present, all *its* Past,
And all *its* Future thou canst see,

Must be deciphered, ere at last
Thou even in part canst hope to be
Able to solve the mystery
Why one sea-worm to death hath passed,—
How must it be, when God doth call
Him whom He placed above them all?"

Ah, yes! we must in patience wait,
Thou dearly loved, departed friend!
Till we have followed through the gate,
Where Life in Time doth end;
And Present, Past, and Future lend
Their light to solve thy fate;
When all the ages that shall be,
Have flowed into the Timeless Sea.

The letters to his absent brother give a representation of his life, as once before on their first separation, and to them we shall occasionally refer for information, and for glimpses at passing events. In one, for example, we find notice of lectures by Mr. Ballantine, our townsman, on Jacobite music, of which George says:—"He told with great effect some stories of the Highlanders and their doings under Prince Charles. One I think I have heard before, to wit, that a clansman, after the Battle of Preston, was busy stripping the body of an officer, when a comrade begged a share of the plunder, and was answered, 'Can ye no kill a shentleman for yoursel'?'"

"The other is quite new to me. When Prince Charles was in Edinburgh with lots of pipers with him, a Highlander gave this account of an interview with some of them to a friend:—'I was doon in a sma' public in the Cannygate, and there were nineteen pipers there, and each played a dufferent pibroch; an' man, I thocht I was in heeven!'"

In a letter to one of George's nieces we find "a story for papa. Hugh Miller was recently very ill with inflammation of the lungs, and related the following experience to his namesake, Professor Miller. He found, as he was lying in his bed, and no doubt just emerging from semi-delirium, that he had *lost his identity*. What his name was he could not tell; but he settled that he was about to begin business as a travelling merchant, selling crockery through the country to the sound of two bowls rubbed together, and he went through many elaborate calculations regarding his affairs. In the midst of these, his eye

lighted on a cornice in his bedroom, which he slowly recognised as something he had seen somewhere before, then he followed a line from the cornice to the floor; from the floor his eye travelled to the bed which grew familiar to him, and finally his glance settled on his own body, and he exclaimed, 'Oh, I'm Hugh Miller!' and there was an end of the crockery business." In the opening month of 1855, George writes to Daniel, "The reactionary lassitude following eleven prelections last week, has slowed my brain-engine, and I look at some duties, and with a hardened heart refuse to fulfil them. I made stern resolutions at the beginning of the winter, not to overwork myself, or to take extra lectures, but the art of saying No is not learned in a day, and though I have succeeded in uttering it several times, I could not escape some demands on me." Amongst these demands were three lectures to the Architectural Institute, 'On the Chemistry of Building Materials,'[1] at the request of its members. In the closing lecture a hope is expressed that through the instrumentality of the Industrial Museum, the knowledge of the qualities of Scottish building stones will receive large additions.

"The many deaths among relatives and friends have made us very grave. I am soberly cheerful among strangers, and try to live day by day as a dying man; and though it is a most imperfect copy of the life of my Lord and Master, I know that I love Him more than ever I did, and I hope to love and imitate Him better and better." The preparedness for death, of which these words give evidence, was about to be put to a searching test. After a lecture at the School of Arts one evening in the beginning of February, he lay down to rest, but was aroused by the rupture of a blood-vessel, and the loss of a considerable quantity of blood. His indomitable spirit showed itself in his coming down next morning as usual to breakfast, and actually lecturing twice that day, though his ghastly appearance showed that he was little fit for such exertion. When the weary day was over, and he was again left for the night, hæmorrhage returned a second time, and consciousness nearly failed him. He was unable to summon assistance, and all that lonely night his

[1] 'Transactions of the Architectural Institute of Scotland for 1854-5.'

bed seemed surrounded by the spirits of those of the family gone before. Some words of a psalm which he had read just before lying down kept a place in his mind through all its waverings: "I shall not die but live, and declare the works of the Lord."

Medical aid was obtained next day, and so probable was the return of the hæmorrhage deemed, that on the third night there was little hope that he would see the dawn. It passed safely over, however, and he gradually regained strength in a way that made the words of the psalm seem prophetic. At first the hæmorrhage was supposed to proceed from the lungs, but ultimately it was ascertained to be from the stomach, resulting, in fact, as was discovered two years later, from a great enlargement of the spleen, unsuspected at the time. The following was received by Dr. Cairns shortly after he was able to leave bed:—

"*Feb. 7th*, 1855.

"DEAR JOHN,—

I am persuaded
That neither Death, when the faint soul, invaded
By its last enemy, awaits the strife;
Nor all the boundless energies of life;
Nor all the awful might that dowers
Angels and principalities and powers;
Nor present things, nor things to come;
Nor height, though higher than the heaven's dome;
Nor depth, though deeper than the Gulf of Gloom;
Nor aught that in the universe finds room,
Shall be able us to sever
From the love of God, which ever
Is in Jesus Christ our Lord.

"What madness, you will say, what audacity and folly, to meddle with that sublime passage, and spoil it by a paltry paraphrase! To which I say Amen; and yet I went and did it whilst lying awake in darkness on Sunday night. It insisted on being paraphrased, and won't trouble me again. . . . I have had a perilous attack, and was close upon the grave. . . . I was in bed both times, and on the second occasion, when there was a gush of blood, a very dying-like sensation came over me. God has still preserved me, and I trust to do Him some service. I have enjoyed much peace of mind this winter. Pray for me,

that I may be kept from fainting or failing till He calls me." Ten days later he writes to Daniel from his rooms in town, having resumed duty to the extent of one lecture a day. "I had a narrow escape from death, for the loss of a little more blood would have ended matters; and indeed I lost between fifty and sixty ounces, which is rather too much. It is a strange feeling your blood gushing from you. I had no pain, and only slight sickness, and I felt very calm."

"Since I broke my arm, I have been disciplined into a mental peace I never knew before, and in spite of fluctuations such as must occur so long as this mortal body is carried about, I look with composure to what God may send. I have been getting knocked down, and then up again at short intervals for the last twelve years, and have more than once felt that I could have been thankful had the *coup de grace* been given; but always with convalescence, the cowardly, unchristian desire to escape the trenches departs, and I go forwards to Sebastopol again. Valetudinarians like me are apt to become selfish and lazy, and I must fight against the tendency." And on March 1st he adds, "I am better, and convinced that the doctors mistook my case; although the loss of the blood was equally weakening whencesoever it came. It would have been poor consolation to have had as an epitaph—

"Here lies George Wilson,
Overtaken by Nemesis;
He died, not of Hæmoptysis,
But of Hæmatemesis."[1]

While convalescent, but still feeble, there was handed to him—on his birthday, as it happened—an official packet, containing his appointment as Director of the Scottish Industrial Museum, then in contemplation. "A week before I got the appointment," he tells Daniel, "I had no expectation of it. The talk regarding it began nearly a year ago, but I told no one, no promise having been made me." After mentioning the kind efforts of friends in his favour, without solicitation on his

[1] By mistaking his case is meant the supposition at first held, that the hæmorrhage proceeded from the lungs, for which hæmoptysis is the technical name, while hæmatemesis means bleeding from the stomach.

part, he goes on to say, "All this was last April, and then the thing slumbered. . . . After Edward Forbes's death, my health was objected to by some one, and I gave up the slightest hope of the thing, so that the appointment took me wholly by surprise." Inquiries on the part of Government as to who was the person most likely to be acceptable to the general public as Director of the Museum had but one reply, and thus the appointment was made. Coming at a time when his health was more than usually uncertain, Dr. Wilson, before accepting it, consulted his medical friends as to his physical ability to fulfil the duties of the directorship, and only did so on their assuring him that his health might in all probability be better than previously, and that it need form no barrier to his undertaking the duties of the post offered him, which seemed to give promise of greater rest, and to call for less exertion. To Dr. Gladstone he writes of it, "Besides the organization and control of a museum of applied chemistry, it includes what is equivalent to a lectureship on Technology. The attractions in the new appointment are not less of responsibility, concern, and care, but less drudgery in mere elementary teaching, and no night lectures. You, I am sure, will wish me God-speed, and ask our Lord and Master's blessing on a great Educational Scheme, which will either be a great boon or evil to us, but, please God, only and largely the former."

As in a few months the new duties became more clearly defined, we shall defer allusions to them. The following letter, addressed in May to a scientific friend, gives glimpses at the mainspring of his life:—

"This last year has been very full of calamities in the circle of my friends, and of trials of flesh and spirit to myself, as it has been to you. I gather from your letter, as I trust I can say for myself, that the national disasters and sufferings of our countrymen, and the state of Europe and the world, and God's dealings with ourselves, have not passed like the winged wind over our heads, and left no mark behind.

"Amidst much thoughtlessness and forgetfulness of God, and many sins which exact their own punishment, and many which seem far too light to me, though in God's eye they are not light,

I have a rejoicing feeling that a greater peace of mind and surer hope in Christ are mine, than was the case some years ago. If it please God to grant me longer life, my prayer is for more freedom from engrossing earthly cares, that I may do more to serve my blessed Lord and Master. And if I am not to live, may I die able to say that I know in whom I believe.

"Is it not a strange thing, and not to the credit of our Christianity, that whilst we congratulate each other on worldly advancement, on additions to titles, on increase of salary, on professional work well done, on enlargements of families and the like, we do not congratulate each other on victories won over Satan, and new proofs of allegiance to Christ? Let me not on this occasion, at least, be wanting in rejoicing with you that you have chosen the better part, and not gone to Prussia. I could not judge for you; or advise otherwise than I did; but you who know how far your religious liberty would be compromised, and preferred that it should remain unshackled, to risking the faith which you have professed in Christ, and perilling the salvation of your children, have reason to ask all who love you, and esteem eternal life at its due value, to join with you in thanking God, that through so great a trial you have passed and gotten the victory.

"They accuse Christians of a selfish caring for their own souls. They forget that in this world every man must take wages; that no amateurs are permitted; that invisibly beside us stand at every moment the Lord of Light and the Prince of Darkness, to press into our hands the wages we have earned, whether we will or no; and that beyond the gates of death they will appear in their own persons and give us the last instalment, those abiding wages which shall multiply themselves through eternity. I will not remind you of what Christ has promised to those who prefer everything to Him: I will be content to remind you that to have grace given us to prevail against temptation, is a proof that the Saviour already loves us, is also a present joy, and the assurance of joys yet in store."

After a visit to London, on Government business, in June, a short but hard-earned holiday was spent, two months later, at Melrose, whence he writes:—

"DEAR MOTHER,—This place is called Mel-Rose, or Rosa Mellis, *i.e.*, Honey Rose, from a famous rose which used to grow here, and drop honey from its leaves. That was in the time of the pious old monks, but in these degenerate days, the roses have ceased to drop anything but their leaves, and occasionally a caterpillar, and are turned into cabbage roses. . . . Yesterday we discovered the Tweed, after a day and a half's search for it, and found it very thick and muddy; I am afraid it has been adulterated." He spent some hours of each day writing under the trees of the Abbey Garden, kindly thrown open to the public by its proprietor, Mr. Tait of Prior Bank. "I am taken for an artist, and have been seen by many parties sketching Melrose Abbey, and why should I take a fit of egotistical obstinacy, and deny that I ever used the old abbey so ill as to attempt to draw it. Mr. Duncan Maclaren is not a man easily deceived, and Dr. Brown belongs to a profession famous for its acuteness. They both saw me sketching, and it would be rude in me to contradict them. However, I can't find the sketch anywhere in my portfolio, otherwise I would send it.

"The mutton here is excellent, and for a very good reason; the sheep feed upon apples. You'll be saying that's some of my nonsense, but it is not. I have been studying the ways of the sheep that share the garden lawn with me. We are now good friends, and they feed close to me, taking me, as Jessie affirms, for a shepherd, whom in my hat and plaid I much resemble. The lawn is in large part an orchard, and my friends look out diligently for the fallen apples, and munch them up as if they were turnips. To-day the gardener mounted a tree, and fell to shaking down the apples, whereupon a wise lamb stepped forward, proposing to try their quality, and an altercation arose between it and the gardener, ending in the victory of the latter tyrannical person. You see the advantages of travel. I might have remained long enough at Elm Cottage without learning the singular fact in natural history I have just recorded. Nor is it the only one I have learned, as you shall find when we return. It would be wrong to come back from Sir Walter Scott's Land, and not romance a little. His own house, by the way, is one of the least romantic we have seen; but the country is won-

derful, wonderful, such a country as even Adam and Eve, when the fiery-sworded angel drove them forth, might have wandered into with delight. Luckily for you my paper is done, or you would have had a rhapsody." Again he says, "You would admire the Abbey garden. The old grey towers look over the walls, with the ghosts of departed monks sitting sorrowfully on the broken pinnacles, and gazing on the desolation and usurpation below. A flock of merry swallows wheel about the battlements, darting out and in between the poor ghosts without touching them.

"The garden is open to all *genteel* people, so that *I* walk through it boldly. A genteel cat paid me a visit in the place, and after salutations with its wreathed tail, passed on. Of another visitor, a large tame rabbit, I am a little doubtful that he had a right of entrance. He looked at me somewhat suspiciously with his great bright eyes, but I suppose he intended only to eat the weeds. He was well dressed, better than myself, a handsome fur cloak, and other things, as the old writers say, 'conform.' My greatness was acknowledged yesterday in a highly satisfactory way. A clown walked into the garden straight up to me, and begged to know 'if I selled any berries?'"

A daily drive in the beautiful neighbourhood diversified such pleasures. One day, finding that no newspapers could be obtained in the little town, he drove to Galashiels, about five miles distant, and after purchasing a copy of the 'Scotsman,' proceeded to read it on the way home. 'This is decidedly worth a penny,' he said to his sister; 'read that.' What she read was a notice of his appointment as Professor to the newly-founded chair of Technology. The official document apprising him of it reached by a later post. Though it took him by surprise at the time, he had been aware such a step was in contemplation. It was suggested first by the professors in the Edinburgh University, to whom it seemed more advisable to have the director of the New Museum amenable to their laws, than to have in him one who might set up rival claims as a public teacher, with a salary from Government, and valuable museums at his disposal. This recommendation was approved by the Edinburgh Town-Council, and the pro-

posal brought by the Board of Trade before Government. Dr. Wilson made no solicitations, and merely expressed willingness to accept such an appointment should it be made.

To Dr. Cairns he writes:—"It will bring with it I hope some bodily rest, although it does not add to my wealth nor diminish my responsibility; and I know too well that this world must be to every wise man a scene of struggle, and to every humble man a place of sorrow, to expect that I shall have less of its cares or woes than before. With unfeigned sincerity I can say that I have rejoiced at the prospect of serving my Saviour more and better through the influence it may give me, and the prayer is often on my lips, and oftener in my heart, that I may be made bold and wise enough to confess Him before men.

"I see so many of my scientific and literary friends devoured by the cares of the world, and fretted by its little troubles, that I tremble lest I too become a selfish scheming worldling. Only God's grace, I know, can keep me unspotted from the world, but *it* can, and your prayers will not be wanting, that so long as I have a place in this world I may be kept from the evil that is in it.

"I wish I could visit you, but it may not be. My duties will seriously begin on October 1st, for I have my laboratory still to keep going, and to gather wonders for my museum from the four quarters of heaven."

The same desire is expressed at the close of a long chemical letter to Dr. Gladstone:—"As for the Chair, I trust and pray that it will increase my power to serve my blessed Lord and Master." His appointment was welcomed with unqualified delight by the public generally. One of the periodicals of the time remarks:—"The formation of the Industrial Museum would in fact have been a matter of comparatively little importance to the community generally had not this appointment [that of the new Chair] been made; and had the Government sought through the length and breadth of the land for a person fitted for carrying out the objects contemplated by it, they would not readily have found one so well qualified as Dr. George Wilson." A writer in the 'North British Review'—believed to be Sir David Brewster—attributes it in great part

to his labours in reference to Colour-Blindness. "We have no doubt," he says, "the researches which it [the work on Colour-Blindness] contains, and their practical relation to the safety of ships and railway trains, which he was the first to point out, were among the grounds of his appointment to the Chair of Technology or Industrial Art, which has recently been founded by the Crown in the University of Edinburgh."[1]

It was no small puzzle to the public at first, what *Technology* meant. In December 1855 he reports, "Technology prospers, and people are learning how to spell it." A definition given before leaving Melrose, to his married sister, was probably the first explanation of the word from him.

"DEAR JEAN,—The Professor salutes you, and grieves over the absence of Technology from your dictionary.

"Let us see what it means, by analysing it into syllables, beginning with the final ones. *Nology*, or *knowledge of*, must mean 'the acquaintance with,' so far good; but what is 'Tech?' A pre-Adamic word, I take it, signifying, as well as I can make out, 'things in general.' Altogether, then, we reach the full idea of the Knowledge of Things in General.

"You will find the word in no dictionary. They had to wait till a *knowledgeable* man like me was born, before they could coin the word. A stupid Greek scholar, if you met him, would tell you that 'techne' meant 'art,' and 'logos' meant 'science,' so that Technology signifies the science of the Arts, as if my derivation did not mean the same. *Science in its application to the Useful Arts* is the meaning of the word.

"In short, I will lecture on Dyeing, Glass-making, Porcelain, Baking; on Hats, Shoes, Bleaching, Ink, Gold, Iron, and, as I said before, things in general. On the objects of my Museum, and the Arts connected with them, my plan will be as follows:—If a Shoemaker comes to the Museum, I'll talk to him about nothing but Hats, and screw information out of him about Shoes. When a Hat-maker arrives, I will pour into his ears all the learning I have acquired from the Shoemaker, and extract from the Hatter information to give the Cobbler on his next visit. In this way I hope to do credit to my appointment. . . .

[1] 'North British Review,' February 1856, Article 'Colour-Blindness.'

It will bring me no addition of salary, rather the opposite, but I shall get more rest, and, please God, I will try to do some good in my Museum."

Before entering on the duties of the approaching Session, a pleasant week was spent in Glasgow, at the meeting of the British Association.

Of the opening address by the President for that year, George writes, "Last night the Duke of Argyle gave his address. You will see it in full in the newspapers, and find a bit that made my head hang down, about a new Professorship. I was glad I was in a quiet corner, when named so unexpectedly." The allusion was the following:—"I am happy to say that, in connexion with the New National Museum, which is being organized for Scotland, there is to be a special branch devoted to the industrial applications of Science; and that a new Professorship, one which has long existed in almost all the continental universities—that of Technology—has just been instituted by the Government. I am not less happy in being able to announce that to that Chair Dr. George Wilson has been appointed. The writings which we owe to the pen of Dr. Wilson, and especially his beautiful Memoirs of Cavendish and of Dr. Reid, are among the happiest productions of the literature of science."[1]

When his induction as Professor drew nigh, Mrs. J. H. Gladstone received the following humble petition:—

"Do you happen to have a gown to spare? A black gown? A silk gown? A gown not much the worse of wear? You will be surprised at me making these requests, but there is a person here known to me, who would willingly go to a meeting, but cannot appear at it without a gown; and though such poverty on the part of a respectable party may surprise you in rich England, I am sorry to say, that the individual on whose behalf I would interest your kind heart, has only two gowns, and these such singular articles of dress, that an appearance at church in either, would infallibly provoke even the minister to smiles, and lead to the gown-wearer being put out of doors. . . .

[1] 'Report of the British Association for the Advancement of Science, for 1855,' p. 81.

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to a fur boa, but otherwise cultivate a severe simplicity in my attire, eschewing all tartan, though not, you may suppose, without a sigh."

One more *jeu d'esprit* before proceeding to notice the labours of the new sphere. In the spring of 1855, Dr. Wilson formed the centre of a merry group, seated one bright and sunny day on the grassy banks of the Doune, beside the old castle, about nine miles from the Bridge of Allan. While one of the young ladies—Miss Black, now Mrs. Henry Lees—arranged an impromptu cushion, to add to his comfort, she volunteered the promise, that should he ever be a Professor, she would work a cushion for his Chair. The promise, lightly made, with little expectation of its being claimed, was faithfully fulfilled, and her beautiful cushion, on which flowers were worked in beads, was an object of much pride, and a source of much pleasure to its recipient, the donor being one whose friendship he highly valued. The following verses were sent in acknowledgment :—

THE CHAIR OF TECHNOLOGY AND ITS CUSHION.

THE Queen of England in her might,
She made a wondrous Chair;
She beckoned to a Scottish wight,
And said, "Ho! sit thou there!"

The Scottish wight, he bowed his head,
And stammered an apology;
"Nay! sit thou there!" the Queen she said,
"In my Chair of Technology."

"To all my subjects, now I say,
I make thee a professor;
Of this great Chair, by night and day,
I make thee sole possessor."

It was a strange, unheard-of Chair,
And every part was new;
The wood that made it was so rare,
No one knew where it grew.

All through the land the people went,
And stopping at each college, "Hey!"
They cried, "Oh! tell us what is meant
By this Chair of Technology."

The base was broad, the back was long;
It was an ample Chair;
The arms were wide, and very strong,
But it was very bare.

The feet on which it stood were stout,
The sides were stiffly barred
With uncles like a Siege-Redoubt;
And it was very hard.

The wise Professor tried to take
Possession of his Chair:
But every bone was like to break,
Though he sat down with care.

"Take back thy gift, oh, Queen of might!
Take back thy gift, I say,
I cannot sleep a wink by night,
And cannot rest by day."

"Nay! I will not take back from thee
My gift," the monarch said:
"Go, ask from other queens than me,
A cushion for thy head."

* * * *

Beside the Clyde's far western shore,
There lived a gentle fairy;
Queen Mirma was the name she bore;
She sang like a canary.

Into a *Blackbird* she could turn,
Whene'er she had the will;
And all the singing birds would burn
With envy at her skill.

To her the sad Professor
Addressed his mournful prayer,
"O Lady, be Redresser
Of this so wrongful chair!"

No sooner had the fairy heard,
Than she began to sing,
"Come hither, every bird
That soars upon the wing."

The birds of every feather
Came trooping o'er the sea:
"O lady, tell us whether
We can do aught for thee!"

"Ye tawny eagles, stretch
Your pinions to the sun,
And from Golconda fetch
Diamonds ere the day is done.

"Ye swift-winged falcons, perch
Upon the highest hills,
And with your keen eyes search
For gems among the rills.

"Ye wandering swallows, fleet
To far Australia's shore;
And ere the night and morning meet
Bring back its golden ore.

"And you, ye stately sea-birds, wing
Your way o'er Indian waves,
And precious pearls and corals bring,
Plucked from the ocean caves."

She waved her hand: away they flew.
She waved her hand, and lo! with gems
And gold returned the busy crew,
Fit for a thousand diadems.

With wondrous skill, and magic powers,
She strung the pearls and wove the gold,
And changed the gems to buds and flowers,
Which never will grow old.

These magic flowers she made to grow
Upon a cushion soft as air,
Full of the down as white as snow,
Which swans upon their bosoms bear.

And just as the Professor
Had almost ceased to sigh,
And seeing no Redresser,
Had laid him down to die,

Behold! a silver voice was heard,
"Hush! I have heard thy prayer,
The cushion of the Blackbird
Shall glorify thy Chair."

And suddenly, as morning skies
The clouds with glory gild,
The fairy-cushion smote the eyes,
And the whole Chair was filled.

It draped the Chair on every side,
It left no angle bare,
It made the Chair a place of pride,
And not a place of care.

And now the once afflicted wight,
To queens makes no apology,
But sits by day, and dreams by night
In his Chair of Technology.

To this lady he writes in the end of that October, with the characteristic mingling of pathos and humour: "My sense of a hold upon life is so feeble (for illness after illness cheats us out of vitality, and lessens one's hope and courage), that I am thankful to remember I have some who think better of me than I deserve, and count themselves my friends. . . . Had Her Majesty consulted my doctors, she would have given me a sofa rather than a chair; but on chair or sofa, I hope to spend my

allotted days on earth, so as to make none ashamed that they called themselves my friends." The cushion was not uncalled for, as very soon after entering on his appointment, he is compelled to say, "The Chair of Technology is not stuffed with down: a thorn or two stick out of it, and it requires cautious engineering to get into it with comfort to myself and others."

The inaugural lecture was devoted in great part to the definition of the limits he assigned to his Professorship. Its title, "What is Technology?" was welcome to the eager public, in doubt as to what it represented. Throwing around the useful arts the charm which intense earnestness, combined with extensive knowledge and poetic sensibilities, cannot fail to impart, he speaks of man in infancy as a creature whom every animal, endowed with unerring instinct, can afford to despise. Yet "half of the industrial arts are the result of our being born without clothes; the other half, of our being born without tools. With the intellects of angels, and the bodies of earth-worms, we have the power to conquer, and the need to do it." Man he defines "as the only animal that can strike a light, the solitary creature that knows how to kindle a fire. This is a very fragmentary definition of the 'Paragon of Animals,' but it is enough to make him the conqueror of them all. . . . Once provided with his kindled brand, the savage technologist soon proves what a sceptre of power he holds in his hands. . . . Well did the wise ancients declare that men obtained fire from heaven, but not well that they stole it. It was a gift to them in compensation for their having no share in the dowry granted to the lower animals; and it has proved an ample compensation. . . ." While the inferior animals have an infallible guide in instinct, man has to learn by dearly-bought experience. "The preventable human suffering, and the needless loss of human life, which are occasioned by our industrial doings, are in amount altogether appalling. . . . All the suffering and death which are occasioned by our ignorance of physical laws, are death-stains upon our science, as well as griefs to humanity. From the moment that we quit the guidance of instinct for that of interpreting, devising, and constructing intellect, we are bound to employ the last

to the full. The deaths of thousands lie at the door of imperfect science; and therefore the necessity for Industrial Museums and Chairs like this." . . .

Speaking of the wide domain included in Technology, he points out that his brother professors have nearly all commissions as wide, nominally, and restricted in meaning only by common consent, by traditional custom, or conventional use and wont. "With the Industrial Museum, this Chair stands in organic connexion. My office, as Professor of Technology, is to be interpreter of the significance of that Museum, and expositor of its value to you, the Students of this University." Those desirous of knowing more specially the objects he had in view in the vast arena now opening before him, will find a clear statement of his position in this lecture, one of the few published in full.[1] We shall only further quote the closing paragraphs, with remembrance of the youthful dreams now realized by his having reached the goal then set before him as the object of his highest ambition :—"In conclusion, suffer me a reference to two things. There are few occasions on which it is becoming for an individual to refer publicly, to what the French have taught us to call his antecedents; but I may be allowed a word on mine here. I came to this University some twenty-two years ago, fresh from the Edinburgh High School, without any prestige in my favour, any recommendations to pave my way, or introductions which should conciliate the good-will of a single professor. A mere school-boy I entered these walls, to pursue, like a hundred others, the difficult study of medicine, without any extrinsic advantages. I look back now with unfeigned gratefulness to the services rendered me by so many of the Professors. I stand indebted to a long list of them for help and encouragement at a time when these are most needed and most prized; and but for the kindness of more than one of their number, I should not be here to address you as their colleague to-day.

"I speak thus not to pay this University a passing compliment, for it does not need it; still less to imply that my case was exceptional, for it was not so at all; but simply that I may bind myself in your hearing to help the homeless and friendless

[1] 'What is Technology?' Sutherland & Knox, Edinburgh. 1855.

students who become my pupils, as I was helped by my preceptors when I was homeless and friendless.

"Lastly, let me commend this new Chair to your good-will and kindly aid. With its associated Industrial Museum, it constitutes a great additional centre of knowledge, from which light will spread over this land and over the world. I can but sow the seed. I have sown it to-day; I am honoured to do thus much; but the prediction, true in reference to all matters, is that 'one soweth and another reapeth.' I am not so selfish or so thoughtless as to wish it were otherwise. Institutions, like all other things, grow faster in these days than they did of old; but perennial things are still slow of growth, and the most enduring the slowest of all. We must be content to pluck the first fruits, and leave the full harvest to be gathered by those who follow. But that its first and last fruits may alike conduce to the glory of God and the good of man, is my prayer; and, therefore, we will confide it to Him who, eighteen hundred years ago, dignified and made honourable the humblest craft, by permitting Himself to be called the Son of the Carpenter, and who now stretches forth His divine hand to bless all honest, earnest labour."

Though the House of Commons had, in 1854, voted £7000 to purchase a site for the Industrial Museum of Scotland, no steps were taken in the erection of buildings for it till some progress had been made in collecting suitable objects. In the spring of 1855, the Independent Chapel in Argyle Square—which Dr. Wilson had attended as a place of worship for the previous ten years—and the hospital adjoining, were secured, and in them stores of specimens quickly began to accumulate. As no laboratory or lecture-room was provided, Dr. Wilson continued to occupy those he had already in use. His class was taught under great disadvantages, the lecture-room being most inconvenient, and at some distance from the temporary depository of museum specimens. The introductory lecture was the only one given within the University walls for the first four sessions. The class was not imperative on the University students, and those who attended represented the professions of "general manufacturer, architect, engineer, farmer, merchant,

baker, tanner, sugar-planter, sugar-refiner, teacher, doctor, and clergyman, besides young men entered simply as students, but chiefly training for industrial callings; as well as retired military, medical, and legal officers of the East India Company's Service, and amateurs." In spite of all drawbacks, above forty attended the first course, of whom six returned the following year to continue the study of the subjects included in the syllabus. Three years were required to go over its contents: the first course being devoted to Mineral, the second to Vegetable, and the third to Animal Technology. After preliminary special lectures, that of Mineral Technology branched out into a series of lectures on Fuel; Building Materials of Mineral Origin; Glass and Glass-making; Pottery; Metallotechny; Electrotechny; and Magnetotechny. Under the three latter heads were comprised the working of metals, and electricity in its industrial relations.

It was fervently hoped that in this new sphere, George Wilson would enjoy greater ease. His health had so long withstood the ravages of disease, with little apparent detriment to his general vigour, that many anticipations were now formed more sanguine than at any previous period of his public life. People wilfully shut their eyes to all but the fact which they tried to impress on their minds, that he *might* live many years more, and even medical men who knew the frail tenure by which any such hopes could be held, argued favourably from the time of repose which seemed to them now before him. We have seen that he himself hoped for more rest as one of the advantages of his appointment; but so ardently did he enter on its duties, that the only rest obtained was from the necessity of more than one lecture daily, and that rest of heart arising from a sense of acknowledged worth, which the affectionate welcome of his fellow-citizens had afforded him. For once the proverb seemed unsuitable, that "a prophet hath no honour in his own country," and his generous mind too readily received the impulse. His labours hitherto were now far surpassed, as if but a resting-place for a higher elevation had been attained. "I am determined," he sometimes said, "to let no day pass without doing something for my dear Museum." By *something* was meant not the daily duties of his post, but special efforts put

forth. "The dear Museum," as it was usually called in private, absorbed every energy. How he begged and planned for it, is well known throughout the world, though what sacrifices were made on its behalf are known but to a very few. The power of coaxing, in him almost irresistible, was brought fully to bear, and sometimes it was amusing to observe how, when presents were made to him, with the express statement that they were not for the Museum, he contrived skilfully to dispose of all arguments, and finally to deposit them on the public shelves. His friends soon got to know that the most welcome gifts were such as had the industrial collection in view, and acted accordingly. Evidence of his zeal and success may be found in the annual report of this Museum for 1859, in which the models and specimens amassed in the four preceding years are reckoned at 10,350 in number. "If properly displayed, these would fill a space equal to that afforded by the Museum of Practical Geology, Jermyn Street, London; or to fully one-half that of the New National Galleries in Edinburgh."

Evening lectures, though not now imperative, were still undertaken occasionally. That the interest of an audience could be won over in favour of the Museum, so as to add to its contributors, was sufficient excuse for any additional labours. One scarcely knew at times whether to be more grieved or amused at the earnest simplicity with which he would urge this as a reason for work, such as his health made most unadvisable, "But, you know, they will help the Museum." Remonstrance was vain; the ardent spirit could not be restrained; "to die working," seemed to him an enviable fate. The desire was frequently expressed to an assistant, though never hinted at in the home-circle, where he carefully abstained from any such allusion. With the view of commending the Museum to the notice of the general public, he gave an address in January 1856, at one of the monthly meetings of the Highland and Agricultural Society, 'On the relations of Technology to Agriculture,' which was published in the Society's 'Transactions' for March 1856. In it he speaks of the Industrial Museum as "one of those institutions which had become necessary by the altered condition of the world, and the felt wants of all the intelligent sections of

the community." After showing in how many ways technology can aid agriculture, he closes with an appeal for their aid on behalf of the national collection. A month later, he delivered two lectures to the Philosophical Institution, Edinburgh, 'On the objects of Technology and Industrial Museums,' which were afterwards published by request, in a local newspaper having a wide circulation among the working classes, and reprinted. 'Granite and its Derivatives, including Glass, Porcelain, and Aluminium,' was the title under which the lectures were announced, but these only formed a slender frame-work, from which many deviations were made. Those who have not had an opportunity of hearing him lecture, will find in those under notice that combination of scientific facts with poetry, humour, and large-heartedness, which swayed his audiences irresistibly. While, as usual, asking their good offices towards the Scottish Industrial Museum, he made a special appeal to intelligent women, "If from no other motive than this, that they may thereby contribute to increase the means of giving an industrial education to women of the poorer classes, and to multiply the vocations which may keep them from starvation, misery, and crime."[1]

In March, by request of the Pharmaceutical Society, an address was delivered to them, 'On Pharmacy as a branch of Technology,' which has been published in the 'Pharmaceutical Journal,' for 1856. It may be supposed how large an amount of correspondence was called for by the infant wants of a national institution, forming no small item of each day's duties. We find in a letter the following statement:—"'Wanted, a Monkey from the Zoological Gardens, to write letters to a philosopher's friends. No ape or baboon need apply. The strictest references expected and given. Apply at Elm Cottage, in the writing of the applicants, enclosing a witty, a stupid, and a pathetic letter.'

"You see to what I am reduced. Here has a letter from one Daniel Macmillan stared me in the face day after day, and reproached me with unfriendliness, ingratitude, shame*less*,

[1] 'On the Objects of Technology and Industrial Museums.' Sutherland and Knox. Edinburgh, 1856.

shame*ful* conduct, indifference, cold-heartedness, selfishness, unbrotherliness, and deliberate wickedness: and not a monkey has answered the advertisement, or supplied even a stupid letter."

At the close of January he tells his cousin Alick:—"I was preaching a sermon last Thursday evening to the medical students in connexion with the Medical Missionary Society, and rejoiced to find I had courage given me to speak boldly (oh! I trust, convincingly also) in the name of Christ. Nearer to Him! nearer to Him! is my daily prayer. . . . I am going to slave less, and now only help religious meetings, or strictly professional ones. My responsibility is much greater than before; my physical fatigue, however, will be less. I live from day to day, feeling no hold upon life, but happy many times, and for long hours, although my temperament is not one which even the choicest mercies could rob of its native inquietude and sensitiveness. But all is well. I have great holes in my heart, and dreary voids in my affections; but on this side the grave they cannot be filled, and I will work as hard as I can till the manumission comes."

He writes to his brother a month later:—"I am always vexed to see a Friday pass without a letter from me to you; but I am often hard pressed, and since Christmas the weather has been a succession of rain, and east winds, and sudden frosts, which have engaged me in a battle from which I have come off but partially victorious. I am practising saying *No*, and improving in the utterance; but I am still far from perfect, and I suffer in consequence. I resolved at the beginning of the winter to give four free lectures, and no more, and to give them to the first who asked them. Dr. Brown's Ragged Kirk got one; Dr. Chalmers' Territorial Kirk got another; the medical students a written lecture, under the auspices of the Missionary Society; and I made a speech for the Medical Missionary Society. Unfortunately, however, three of these fell on last week, and I had to sit in one of the Ragged Kirks without a fire for an hour on the pulpit steps, the fruit of all which has been a slight attack of hæmoptysis, now, however, passing away.

"Besides these lectures, I have had three on Technology,

which are to be counted as the things to which NO cannot be said. I mention them that you may know why my pen has not been employed on your behalf."

"*April* 10*th*.

"We have had here an Eastern War, which has defied all meetings of plenipotentiaries, and still rages unabated. For a month or some forty days, a dreadful Lent, the wind has blown geographically from Araby the blest, but thermometrically from Iceland the accursed. I have been made a prisoner of war, hit by an icicle in the lungs, and have shivered and burned alternately for a large portion of the last month, and spat blood till I grew pale with coughing. Now I am better, and to-morrow I give my concluding lecture, thankful that I have contrived, notwithstanding all troubles, to carry on without missing a lecture till the last day of the Faculty of Arts to which I belong. But it was not possible to write you sooner. Jessie and I propose to set off on the 12th for the Bridge of Allan, and thence I engage to write, furnishing all desiderata before next week's post."

On the 13th he writes home from the Bridge of Allan: "We reached this safely last night at half-past six. The band of music was of course at the station, and the people took the horses out of the carriage, of course, and drew us into town. In a region so much visited by volcanoes and earthquakes as this, we could not but expect to find a great physical change. The hills have grown into mountains since last year, perpetual snow covers their summits, and glaciers are continually sliding down into the valleys, sweeping everything before them. The wind has blown so long from the east that most of the tall houses are bent double, and the little ones are turned round so that the back door has become the front. We succeeded, however, in finding our lodging, and duly entered by the proper door. Jessie, indeed, cannot see the differences I have described above, and affirms that there is only one new house. I leave you to judge whether she or I am correct. If people are to travel without seeing wonders, I don't see what is the use of travelling. The folks here evidently recognise me as Professor of Technology, especially those who never saw me before."

The subjoined letter to Dr. J. H. Gladstone alludes to a chemical discovery he had made:—

"BRIDGE OF ALLAN, *April* 28, 1856.

"DEAR INSPECTOR,—I really have the suspicion that I owe you a letter, and indeed I resolved as soon as I came here to write to you, and why did not I? Because, after a few days' improvement here, and all disappearance of the hæmoptysis which had driven me from Edinburgh, I as usual began to work as if I were quite well. I was seized with a technological fit, and set off to explore a bleach-work, dye-work, and carpet-work in my neighbourhood. You can sympathize with the pleasure such visits give. To me they are mentally exhilarating in the highest degree: I like to see the machinery, the chemical processes, and not least to chat with the workpeople. But my stupid body always makes itself disagreeable. On this occasion, after returning much delighted, I lay down on the sofa to reflect on the sights I had witnessed; but it was soon stopped by coughing, and blood, blood, crimson blood. This stopped my letter-writing, and compelled quietness, counter-irritation, and no more technologizing. I am better, but frail, and sitting in medical judgment on my own case, I am afraid that I must report myself decidedly lower down the hill than this time last year, and with less of my lungs useful than before. But it's all well; I am in God's hands. I pray neither to die, nor to live, but to be kept from the evil that is in the world. Jessie and I have had a delightful fortnight of Bible-reading, and talking and meditating and worshipping, such as you and May can understand. . . . I am delighted to hear of your new chemical doings. . . . I have given you your new title at the beginning of this scrawl, but I would be glad to know if the following is the correct statement of the matter. If not, you must complain to the Mendicity Society.

"'THE BLOOMSBURY DETECTIVES.

"'On the 1st of January, in conformity with John Dalton's Act, Professor Faraday, in the presence of Dr. Hoffman and the Master of the Mint, added three equivalents of the nitro-prusside of sodium to five equivalents of the cobalticyanide of potassium,

and seven equivalents of the iodide of methylammonium, which were mixed with water and shaken together. On April 1st the liquid was examined, and to the consternation of all parties, the sixty-seventh part of an equivalent of hydrogen was found wanting. Information was immediately sent to the different Universities, the British Association, and the French Academy, but up to last Wednesday no traces of the missing 67th could be found. It was then resolved to put the case in the hands of that active officer, Serjeant Gladstone of the Bloomsbury Detectives, who instantly started in pursuit of the unaccounted-for fraction, and we are happy to say, by pursuing a curve whose ordinates are as A is to B, so is C to D, succeeded late on Saturday in coming up with the missing fraction, which was immediately projected on paper. Her Majesty, on hearing the interesting announcement, immediately desired that Serjeant Gladstone should be made Inspector, and his portrait added to the Crime-an Gallery.'—(*No News*, February 30.)

"I cordially congratulate you, my good friend. It is a responsible office that of yours."

To his mother he says, "I have been resting two days after my technological exploits. It was a great delight to me to visit two works full of illustrations of chemical and mechanical science. In truth the pleasure such visits give me is of a deeper and more delightful description than I could easily convey to most people, and I have totally failed to persuade that stupid body of mine that its only business was to carry me 'upstairs and downstairs, and in my lady's chamber,' wherever I pleased to go. An old grudge which it has against my soul, has made it behave less obligingly than was desirable, but rest has made it sweet-tempered again, and it promises to be on its good behaviour in future."

After returning to town, an amusing instance occurred of the belief which seemed to pervade all classes, that he never could be appealed to in vain, either for information or help. Fireworks were to be displayed in celebration of the proclamation of peace after the Crimean War, and by the aid of Mr. Tomlinson he was able to meet the wishes of the Provost and Council. In acknowledging his friend's kindness he says, "It seems to

tal practice. It grapples with the existence of evil, and apparent frustrations of design, pronouncing the solution of all that is inexplicable in the morphology and teleology of the mortal state, to be attainable only when design at last triumphs in the heavenly life. The strain pervading the lecture is to be found in others of his writings, especially the article on Chemistry and Natural Theology,[1] and an address on the Resurrection, to medical students, as yet unpublished.

Along with a copy of the lecture forwarded to Mr. D. Macmillan, is a note saying, "I send a sermon, which, when you have nothing better to do, read. . . . Some bits of it you will read, as I wrote them, with thoughts of ourselves; but you will see, that like yourself, I try to be ready either for life or death." To Dr. Cairns, the lecture so painfully brought the impression that he did speak unconsciously of himself in its pages, that he immediately wrote to ask if he felt worse in health. In reply George says, "Your very kind letter took me by surprise. I did not intend either in the lecture or letter to give expression to feelings so sad as you have inferred me to be actuated by. The lecture was delivered last February, not to provide an outlet for grief, but to press some matters home to the minds of students of medicine. Read as a whole, I entertain the hope that the lecture will not be found unbecomingly or morbidly sombre and grave.

"As for the letter, it was written on Sabbath, and I therefore avoided lighter matters; it was written also to you, recently sorely tried by a mournful affliction, and therefore it was grave. I do not at all disavow having been myself grave in writing it for personal reasons, but I cannot allow you to expend an undeserved amount of sympathy on me, who really am not making special complaint.

"If I were to sit in medical judgment on my own case, I should find it quite impossible to pronounce upon my own viability. To be well enough to work is all a man needs to be, and is all I expect. Latterly my working power has certainly been less than before, but it may quite well come back. I can honestly assure you, that regarding my prospect of life as a

[1] 'British Quarterly Review.'

matter on which God has not given me a decisive or preponderating answer in the negative, and feeling that I do not *deserve* (as a profitable servant) to die, and further despising the moral cowardice of shrinking from work, I am studying and labouring cheerfully as one who may live and must not cumber the ground. . . . In reality, the other world and the shadow of death have been in my thoughts since I remember. Often formerly as much as now, have they been uppermost. Do not, therefore, think me given over to unusual or unworthy sorrow."

To a fellow-invalid like Daniel Macmillan, he confesses more freely in June to being "very languid, weary, and unfit for work of all kinds. To write even this letter is an effort, and I feel as if to lie down and sleep were the only thing worth doing. I have often been as ill before; but like you, I feel that some time must be the last, and I often faithlessly and selfishly wish it had come.

"If I go out of town this autumn it will be to some place near at hand, where I can be quite at rest, and lounge idly back into vigour again. This long cold spring has put its mark upon me, and I slowly find myself burning nearer to the socket. . . . I have no hope of being in Cambridge this year. I am not well enough to travel willingly, and have no prospect of being compelled to go south, though perhaps I may be."

From Melrose, whither he retired for six weeks in autumn, he writes to his brother Daniel, "The weather has not been propitious, yet I have contrived to spend a great deal of time in the open air, and have profited by it. . . . The last three months, up to the close of July, were spent in almost continual physical uneasiness, rising often to pain; and that is not pleasant. But as I now am, I should be very, very ungrateful to the Giver of all good gifts, if I made great complaint, and the future I leave with Him. I enjoy the quiet, and on a Sabbath like this, can meditate on that great world beyond the grave—towards which I perceptibly approach nearer and nearer each summer—in a way I cannot do in the whirl of town life."

While at Melrose, he prepared for the press what has been unquestionably the most popular of his writings, "The Five Gateways of Knowledge."[1] It "was written to help a Sunday

[1] Macmillan and Co., Cambridge.

school," its first delivery being in Leith, and the substance of the whole being given in one lecture. Some years later, it was offered in a more expanded form in two lectures to the Philosophical Institution, Edinburgh, in 1853, and with slight changes and additions, is published as then delivered. The title has been supposed to be borrowed from Bunyan's town of Mansoul, a quotation from it being used as a motto; but this motto was an after-thought, and not a suggestive one previous to writing. A reverence for the body, with its wonderful powers and capabilities, and the noble destiny awaiting those sharing the Christian's resurrection hopes, seems the stand-point from which he gazes at those senses by which the soul and body most freely commune together. The strongly prevailing tendency to undervalue the body he regretted, and probably in this "prose poem," as it is fitly called, he has done very much to counteract it. The 'Five Gateways' may be taken as one of the best specimens of his popular non-scientific lectures; the pleasure it affords is permanent, and answers to one test of a work of genius, in being equally enjoyed by the young and the old. A cheap edition was speedily called for, and in a second issue there appears a beautiful illustration, by Noel Paton, representing the soul as a child, to whom the senses—female figures—tenderly and lovingly minister. Mr. George Harvey was the medium by which the request for an illustration was conveyed to Mr. Noel Paton, as is shown by this note:—

"DEAR MAESTRO GIORGIO,—You were pleased to say that you would visit Noel Paton the Good, with a letter from me about the coveted design from his wonder-working pencil. Know then, Maestro Eccellentissimo, that enclosed is the letter, and if you will make it part of your Pilgrim's Progress to carry it to Fairyland, where No Ill abides, and deliver it with speech of your own to him who should receive it, you will render another kindness to your loving

"GIORGIO VOLUSENO."

The difficulties surmounted by Noel Paton's beautiful design, will be better appreciated by perusing a letter written previously.

"DEAR GEORGE HARVEY,—Wherever you are give me a little help. A Cambridge bookseller insists on publishing a lecture on the senses, which you heard in whole or in part at the Philosophical Institution. He is bringing it out elegantly, and of his own move, resolves upon a medallion or vignette on the board of the book. . . . The bookbinder's man of genius has made a stupid design, and I now apply to my friend of genius to help with a better. I have suggested, 1. Simply a classic head, such as the Antinous, front face. 2. A five-rayed star (to stand for the soul)! surrounded by a glory. 3. A five-gated, five-angled tower, as in the old 'Holy Wars.' The difficulty is to draw the soul. Ye never seed the sowl, did ye?

"Draw me something, like a good man, and send it here. My last notion is a five-rayed star, whilk is the sowl; a pentagon surrounding the same, whilk is the five-gated Citie of Mansoul; a serpent biting of his tail, whilk is Eternity, surrounding that, as is here drawn by our own limner,

"Can you beat that? If so, do it, and I'll be much obliged. I am in a most pleasant country here, and pretty well.—Your dearly loving GEORGE WILSON."

Of the 'Five Gateways,' about eight thousand copies have been sold up to this time, besides an unauthorized issue by a

house in Philadelphia, of which we have no return. It has been spoken of as "a hymn of the finest utterance and fancy—the white light of science diffracted through the crystalline prism of his mind into the coloured glories of the spectrum; truth dressed in the iridescent hues of the rainbow, and not the less but all the more true." "He tries with that affectionate spirit, that love of the good and the great, that reverential adoration of God's wondrous works, which have made Dr. George Wilson's name a pleasant sound in the ears of all who know him, to make his readers feel with himself an intense appreciation of those blessings in which he revels, who knows how to make his soul and his senses work in a wise harmony." We believe this book to have become one of the great cords of love that knit George Wilson so closely to the hearts of thousands. To heap up, as might easily be done, the tokens of admiration lavished on it, seems superfluous; it needs them not. Let us rather refresh ourselves with a few of its pictures:—

"The ivory palace of the skull, which is the central abode of the soul, although it dwells in the whole body, opens to the outer world four gateways, by which its influences may enter; and a fifth, whose alleys are innumerable, unfolds its thousand doors on the surface of every limb. These gateways, which we otherwise name the Organs of the Senses, and call in our mother speech the Eye, the Ear, the Nose, the Mouth, and the Skin, are instruments by which we see, and hear, and smell, and taste, and touch: at once loopholes through which the spirit gazes out upon the world, and the world gazes in upon the spirit; porches which the longing, unsatisfied soul would often gladly make wider, that beautiful material nature might come into it more fully and freely; and fenced doors, which the sated and dissatisfied spirit would, if it had the power, often shut and bar altogether. . . .

"Its beauty [the eye] is, perhaps, most apparent in the eye of an infant, which, if you please, we shall suppose not dead, but only asleep, with its eyes wide open. How large and round they are! how pure and pearly the white is, with but one blue vein or two marbling its surface; how beautiful the rainbow ring, opening its mottled circle wide to the light! How sharply defined the

pupil, so black and yet so clear, that you look into it as into some deep, dark well, and see a little face look back at you, which you forget is your own, whilst you rejoice that the days are not yet come for those infant eyes, when 'they that look out of the windows shall be darkened.' And then the soft pink curtains which we call eyelids, with their long silken fringes of eyelashes, and the unshed tears bathing and brightening all! How exquisite the whole! How precious in the sight of God must those little orbs be when he has bestowed upon them so much beauty! . . .

"What a strange interest attaches to that little darkened chamber of the eye! Into it the sun and the stars, the earth and the ocean, the glory and the terror of the universe, enter upon the wings of light, and demand audience of the soul. And from its mysterious abiding-place the soul comes forth, and in twilight they commune together. No one but HE who made them can gaze upon the unveiled majesty of created things: we could not look upon them and live; and therefore it is that here we see all things 'through (or rather in) a glass darkly;' and are permitted only to gaze upon their shadows in one small dimly-lighted chamber. . . .

"Picture to yourself the contrast between a great orchestra, containing some hundred performers and instruments, and that small music-room built of ivory, no bigger than a cherry-stone, which we call an ear, where there is ample accommodation for all of them to play together. The players, indeed, and their instruments, are not admitted. But what of that if their music be? Nay, if you only think of it, what we call a musical performance is, after all, but the last rehearsal. The true performance is within the ear's music-room, and each one of us has the whole orchestra to himself. When we thus realize the wondrous capabilities of the organ of hearing, I think we shall not fail to find an intellectual and æsthetical, as well as a great moral admonition in the Divine words, 'He that hath ears to hear, let him hear.' . . .

"If this apply to earthly music, how much more to heavenly! Though everything else in the future state may be dim and dark, and in all respects matter of faith or hope, not of vivid realiza-

tion, this at least can be entered into, that all the children of Adam and Eve could unite in a common song. Of all the organs of the body, therefore, the ear is the one which, though for its present gratification it is beholden solely to the passing moment, can with the greatest confidence anticipate a wider domain hereafter.

"In consonance with that home in eternity for which the Ear expectantly waits, to it is promised the earliest participation in the life to come. This divinely authenticated fact appears to have made a profound impression on men of genius of all temperaments since the days of our Saviour's presence upon earth. Many of you must be familiar with that beautiful hymn of the Latin Church, the '*Dies Iræ*,' in which the solemnities of the last judgment and the sound of the trump of doom, are echoed in mournful music from the wailing lines. Sir Walter Scott translated this sacred song. Goethe has introduced a striking portion of it into the cathedral scene in Faust, where the Tempter assails Margaret. Martin Luther's hymn reads like an echo of it. After all, it is itself but the echo and paraphrase of passages in the New Testament; and Handel, when he composed the 'Messiah,' went to the original for those words which he has set to undying music. From these words we learn that the summons to the life to come will be addressed first to the Ear, and it first shall awake to the consciousness of a new existence: 'for the trumpet shall sound, and the dead shall be raised incorruptible, and we shall be changed.' . . .

"When I think of all that man's and woman's hand has wrought, from the day when Eve put forth her erring hand to pluck the fruit of the forbidden tree, to that dark hour when the pierced hands of the Saviour of the world were nailed to the predicted tree of shame, and of all that human hands have done of good and evil since, I lift up my hand, and gaze upon it with wonder and awe. What an instrument for good it is! what an instrument for evil! and all the day long it never is idle. There is no implement which it cannot wield, and it should never in working hours be without one. We unwisely restrict the term handicraftsman, or handworker, to the more laborious callings; but it belongs to all honest, earnest men and

women, and it is a title which each should covet. For the queen's hand there is the sceptre, and for the soldier's hand the sword; for the carpenter's hand the saw, and for the smith's hand the hammer; for the farmer's hand the plough; for the miner's hand the spade; for the sailor's hand the oar; for the painter's hand the brush; for the sculptor's hand the chisel; for the poet's hand the pen; and for the woman's hand the needle. If none of these or the like will fit us, the felon's chain should be round our wrist, and our hand on the prisoner's crank. But for each willing man and woman there is a tool they may learn to handle; for all there is the command, 'Whatsoever thy hand findeth to do, do it with all thy might.'"

After reading those extracts, we feel that Dr. Cairns does not overstate the truth in saying, "His gifts of exposition and illustration were perfectly wonderful. A scientific clearness of conception and expression hardly to be surpassed, with fulness of knowledge, ranging over a vast surface of inquiry, were in him combined with a freshness of fancy, that seized on the most unexpected analogies and contrasts; an exuberant humour, that gave zest and relief to the hardest and gravest subjects: and a high strain of moral eloquence that linked every topic with man's joys, and sorrows, and deep enduring interests. It would not be easy to name examples of exposition more admirable and delightful than his statement of the Atomic Theory in his paper on 'John Dalton,' his various essays on 'The Electric Telegraph,' and his 'Five Gateways of Knowledge.' His most hasty occasional lectures run into shapes of inimitable grace and beauty, extracted often by the plastic hand of the artist from the most intractable materials. One great charm of all his writings is their radical simplicity and truthfulness. The eyes of science precede and guide everywhere the wings of fancy. No original scientific man, with so much of the genius of the poet, had ever so little of the exaggeration of the rhapsodist."[1]

While he says, "My modesty is shocked by sending to so many and so wise men my small rhapsody," he reports the acknowledgments received as "of a threefold character,"—

[1] 'Macmillan's Magazine,' January 1860.

"1. *Talleyrandish, i,e.,* have got the book, and expect pleasure from reading it.

"2. *Patronizing;* will put a copy in the School Library.

"3. (*a.*) *Hearty,* such as Dickens, Wilson, Ruskin, Canon Wordsworth, Buxton, Argyll.

"(*b.*) The same, but judiciously critical.

"(*c.*) The same, but grumphy, and injudiciously critical. . . .

"I read them all with interest, most with pleasure, none with pain."

The following letter, written before leaving Melrose, is not offered as a specimen of his official, or even semi-official correspondence; the style is peculiarly his own, and not a few such did good service in securing specimens for the museum. It is addressed to his friend, Miss Abernethy:—

"*Private and Confidential, not to be shown in Court.*

"DEAR JANET,—I am in a mood so lazy and languid that it costs me an effort to write even to you, especially when I read in the newspapers such appalling accounts of damages for breach of promise, and remember how many letters you have of mine, and what dreadful damages juries give. If this letter appears stiff and stupid, you will understand why it is so. It is, indeed, a business letter, as you will immediately perceive, and I trust, dear madam (I dare not venture on anything stronger), you will reply to it.

"A message was brought to me that there lay at the shop of *our* grocer here, a pair of wonderful Curling Stones, made of *black* granite (whatever that may be), mounted in silver, beautifully polished, and to be had (cheap) for £3.

"The Director of the Industrial Museum, having money to spend, went to-day to see the wondrous stones; found the granite turned into whinstone, the silver into electro-plate, and the £3 into £3, 10s. Further, the worthy grocer informed the Director that the stones were sent to him by Mr. W. . . . and that he was not to take a farthing less than the said £3, 10s. for the stones, which indeed are very beautiful. Now, dear madam (oh, how tempted I feel to say, dear Janet), I write at

the request of the Director, who—though an extraordinary genius, and in truth, the only person in the world who knows aught about a wonderful science called Tech-Knowledgy, is as ignorant of the price of Curling Stones as that of Curling irons or Curl-papers, and understanding from me, that you are very learned about them (not the curl-paper or the curling irons, dear madam, but the curling stones), and that you have a nephew called, if I caught the name aright, Professor Neavn, also very learned concerning the said stones—has requested me to ask your ladyship's, and your ladyship's nephew's advice about purchasing the stones.

"In a word, is it a large, a small, or a medium price to pay? Please to signify by your own esteemed (I would like to say beloved) hand, or that of your respected nephew, what the price of curling stones is, that I may decide, before leaving, about the black granite ones.

"Mother, Jessie, two little parrots sent us from Australia, the Director, the Professor, the gig, the horse, the driver, and *I* are here, and those of Us that are well, are well, and those of us that are not, are not. . . . Your (I was going to say dearly loving) obedient, humble servant, GEORGE WILSON."

In a Museum letter of the same semidemisemi-official kind, the following passage occurs: "I have just discovered that I have taken two sheets instead of one. Don't make this known to Government, or they'll hang me in a noose of red tape, as a warning to all wasters of public property. I try your ingenuity in endeavouring to show my desire for economy. Read the pages according to the Rule of Three. If that does not succeed, try them upside down; if no sense comes of that, give up the perusal."

Besides making purchases, he had a "begging cap, which," he says, "since I was made Director of this Museum, I have industriously (and industrially) worn." No one was safe from the begging cap, yet no one grumbled at the beggar, but rather encouraged him to continue to wear it, and by its successes to minister to industrial progress and happiness.

On returning to town he reports all as "much the better of

the rustication. I certainly feel stronger, and though using all precaution, have been assuring myself of increased strength, by visits to Hat Factories and Comb-makers' premises."

In the opening lecture for the Session of 1856-7, while defining Technology as "the sum or complement of all the sciences which either are, or may be made, applicable to the industrial labours or utilitarian necessities of man," he dwells on those most closely related to the recurring urgencies of daily labour, and, therefore, of pre-eminent importance. The lecture appeared in the 'Edinburgh Philosophical Magazine' for January 1857, with the title 'On the Physical Sciences which form the Basis of Technology.' It contains beautiful personifications of some of the sciences, while abounding in practical scientific details. Of these pictures we take one: "Geology is half of the heavens, half of the earth. She stands an imperial queen, with her head among the stars, and her tresses are white with the snows of ages; but her feet, graceful and quick, are beneath the young grass, and are wet with the dews of to-day. Her hands are often raised to shade her eyes, as she gazes through space to exchange greetings with each sister-presence in the worlds around. But her fingers are as often busy with homely cares, and with bended forehead she traces for the tenant-lord of her estate the best track for his railway, and channel for his canal, and shows him where to find coal and iron, and how to dig for gold."

In order to extend a knowledge of the new science, and to interest all classes in the Industrial Museum, he delivered, in December, by request of the Educational Institute of Scotland, an address 'On Technology as a Branch of Education;' and on Christmas Eve, by solicitation of the Committee of the "Art-Manufacture Association," a lecture 'On the Relation of Industrial to Ornamental Art.' The latter has been published.[1]

At a conversazione of the Royal College of Surgeons, before the close of the year, he delivered the lecture on 'Chemical Final Causes,' which forms one of the 'Edinburgh University Essays for 1856.'[2] In it he attempts to add to the ever-accumulating proofs of design by showing, especially, that

[1] Edmonston and Douglas. Edinburgh. 1857.
[2] A. & C. Black. Edinburgh. 1857.

phosphorus, nitrogen, and iron are the best adapted of the known elements for the purposes they are required to fulfil in animal organisms."[1]

"What we call a final cause," he says, in the concluding pages, "is not God's final cause, but only that small corner of it which we can comprehend in our widest glance. The fragmentary corner fills our intellects, not because it is vast, but because they are small, and we find how small they have made it, the moment we try to make the fragment a measure of infinite wisdom. The wisest of us is but a microscopic shell in the ocean of Omniscience, and when left on the shore with a drop of its waters in our cup, we cannot reflect in its tiny mirror more than a drop's worth of the meaning of the universe. And yet we speak as if out of that drop the whole universe might arise!"

During this Session, as in the following one, he occupied the President's Chair in the Royal Scottish Society of Arts, in the prosperity of which he ever took a lively interest. His addresses on entering office and quitting it, are to be found in the Transactions of the Society.[2] While necessarily containing many references of local interest only, some interesting topics, expanded elsewhere, are touched upon. The good offices of this body were by his efforts enlisted on behalf of the new Museum. The meetings of such societies being in the evening, called for an expenditure of energy unfavourable to his health, yet he deemed it a duty as well as a pleasure to frequent them occasionally. For some years he edited the 'Transactions of the Society of Arts;' he was twice elected a member of the Council of the Royal Society of Edinburgh; he was a member of the Council of the Chemical Society, London; a member of the Chemical Committee of the Highland and Agricultural Society, and one of the examiners for the agricultural diploma; an honorary member of the Pharmaceutical Society of Great Britain; and corresponding member of the Medico-Chirurgical Academy, Genoa.

Of the voluntary labours which he failed not to add to those

[1] See Appendix.
[2] 'Trans. R. S. S. A.,' vol. v., pp. 1 and 43.

imperative on him, we find mention in a letter to his brother of March 26, 1857,—"Little more than a fortnight will bring my lectures to a close. I begin dyeing on Monday, and we shall dye away till the middle of April 'finishes our course.' I shall be thankful. I like work; it is a family weakness, though I don't pretend to lift your elephant load. But one may have too much: we grieve when we read of your labours. Even the Pagan Hindus put only one world on the elephant's back, and gave him, moreover, a tortoise to stand upon. The tortoise will rebel if you try to carry another world, and infinite space will engulf you.

"I don't preach to you. People do to me, and the very next moment ask me to do what they preached against. I am looked upon as good as mad, because on hasty notice I took a defaulting lecturer's place at the Philosophical Institution, and discoursed on polarization of light. You will understand why I did. I was wearying of mere teaching, and wanted to grapple again with a difficult subject, which in 1842 I had studied with some fulness, and at intervals had worked at since, but never so fully as for the sake of my new lectures I wished to do. So I had a wrestle with it, and we finally tried strength against each other in the Music Hall, and though I was not unbruised, nor in all things victor, they gave me by acclamation the crown; mentally I was much the robuster of this struggle, but not physically. To be well enough to work is enough, but to cough half through the wakeful night, and awake to find your handkerchief spotted with blood, is not encouraging. Yet I have got through the winter better than usual, and am still wonderfully well. I have resolutely declined all fresh demands, and am hoping for a little rest." Three weeks later he writes from Bridge of Allan:—"I fled hither a week ago, driven by east wind, cough, and other ailments, and have been leading a dog's life for the last two or three days,—*i.e.*, eating, sleeping, and drinking,—much to my betterment."

"MY DEAR MOTHER,— "*May* 1, 1857.

'How doth the little busy bee
Improve each shining hour,
And gather honey all the day,
From every opening flower.

"Jessie and I seek to make these remarkable lines our motto, but are a little hindered in our laudable object, because, in the *first* place, we are not bees; 2*d*, By having no shining hours, the sun obstinately hiding himself behind clouds; 3*dly*, There is no honey to be gathered, because, 4*thly*, there are no flowers. At least, however, we resemble the bees in being busy, although I cannot take it upon me to say that we are so 'all the day,' as untruthful Dr. Watts declares the bees to be, in the face of the fact that they are notorious for fighting, stabbing, and singing songs, besides eating, drinking, and sleeping. At all events, between us we despatched fourteen letters yesterday, and here is a pile beside me to-day waiting for replies.

"This is the first of May, with promise of the sun; the snow is melted on the Perthshire hills, and the lambs are reposing on the grass as if they were immortals. . . .

"Don't think me selfish if I stay here to the last. This rest of soul and body is to me welcome beyond description. I hope to fall to work again stoutly on my return."

In July, Government business called him to England. "I hope by the visit," he writes, "to do soul, body, and my dear Museum good." A month later he spent a few days in Manchester viewing the treasures of the Exhibition held there in that year, and then passed on to Dublin to study the arrangements of its Industrial Museum, and also attend the meetings of the British Association. Three bright and happy days were spent in the Manchester Crystal Palace. He was accompanied by his sister and a friend, and while each roamed about at will, according to individual taste, it was their custom to meet at a certain hour at which a daily concert was given. A note written on one of those occasions expresses his delight:—

"*August* 20, 1857.

"MANCHESTER EXHIBITION.

"MY DEAR MOTHER,—I have just halted for a rest in a quiet corner near the orchestra, which is about to be filled with musicians and play us a tune.

"This is dreamland; fairyland; a bit of heaven upon earth. Angels who once were ministering spirits have here entered

into a typical rest, and with their great white wings crystallized into bright marble, look on with sweet and serene faces, and tell us not to despair of rest.

"The spirits of some of the wisest, and gentlest, and best of their kind, are here embodied in iron and bronze, and metal and ivory, and all sorts of workable materials; dead painters, poets, sculptors, artists—dead in one sense, alive in another and better sense—here speak to us in terms the most winning and persuasive. Again and again do I wish they were living, that I might thank them and bless them. Perhaps if they were living I would rather dispute with them than believe them, but here they have it all their own way. And their way is the best here, for they cannot reply if you refuse their lesson, and you lose the good of it if you carp as to its meaning. And so I gaze, and gaze, and gaze, and often find the tears in my eyes, and often smile with delight, and altogether forget the clogging weight of this evil-good body, through whose dim but not dark windows we are compelled to look.

"Jessie will send you our news, which are simply none.—
Your loving son, GEORGE."

The visit to Dublin was made more enjoyable by the presence of his friends, Dr. and Mrs. J. H. Gladstone, and Professor Voelcker of Cirencester, "a happy family" being formed by their means, so that he says, looking back on it, "my memories of Ireland are very pleasant." A merrier party than they were could scarcely have been found, while business was by no means forgotten. Dr. Wilson read to the Natural History Section a paper 'On the electric fishes as the earliest electric machines employed by mankind,' which was more fully written out for the 'Edinburgh Philosophical Magazine;'[1] and to the Chemical Section a paper 'On the processes for detection of Fluorine.'[2]

After his return Dr. Gladstone received the following account of his employments:—

[1] 'Edin. New Phil. Mag.,' October 1857.
[2] 'Brit. Assoc. Reports' for 1857, p. 61.

"MY DEAR JOHN,—

'Thirty days hath September,
April, June, and November,'

and on the last day of the first, A.D. 1857, I proceed to answer your most welcome letter of yesterday.

"I am only getting into working order again. It takes me some time to settle down after such a whirl as I was in. I have not exactly been idle, but certainly I have not contrived to do much. I am rather digesting plans than carrying them out. A President's Address; a Syllabus; three Special Lectures on Paper, Pens, and Ink; one on Industrial Museums; and a course of prelections on Technology, are at present simmering together in my head, like the diversified contents of Meg Merrilees' gipsy camp-kettle. To-morrow, when the new month comes in, I'll begin ladling them off into separate pots and pans, and fall to the process of cooking properly so called. Meanwhile I am chiefly occupied with Forbes's Life, and Directorial Correspondence. . . . I subjoin two conundrums for May's benefit. They made themselves in my brain the other day, and as their study is fitted to invigorate the intellect, and act on it as a powerful tonic, I recommend them to her meditation. The answers I enclose in a folded paper.

1. In what country are all the people's arms, legs?
2. What fish are most active when the water is frozen?

". . . It is at my pen's point to write about India, but I forbear. We shall exchange thoughts on that solemn subject again. Meanwhile, let me say that my sympathies are not least with the humane Englishmen who are compelled to be God's battle-axes on the guilty. Were I in India, I should be hanging and shooting like the rest of them."

The travelling that autumn had been contemplated with considerable trepidation; and thankfulness at no apparent bad results from it was great. A return, however, of that trial which had so often come upon him, namely, illness as the winter session approached, was sent, so that he writes to Mrs. J. H. Gladstone, on October 22d, "I have been confined to the house for the last ten days with a sharpish inflammatory attack, de-

manding leeches, and other medical delectations. I told you that the doctors had discovered a new malady in my distempered body, a swelling in the side, which I knew too well was likely to be used as a pin-cushion to stick thorns into by Satan. And so it was, but thanks to the leeches, and the medicines, and the doctor, and the good nursing, and, above all, to the mercies of God, I am back to my desk, warned in time to be very wary this winter.

"I ought to be very thankful that the attack did not occur at Dublin, or on the journey to and fro. I knew the risk I ran, but the consciousness of duty, and the forgetfulness of that risk which I made a point of fostering, lest hypochondriasis should get the upper hand, set me at ease, and would again in similar circumstances. Break the news gently to A., and if she takes it too much to heart, remind her that I subscribe to the Widows' Fund." A. was one of his little wives, then about three years of age.

To another friend—Miss Otté, St. Andrews—he speaks of the great risk of fatal hæmorrhage from sea-sickness, as a source of anxiety to him while travelling, while he adds, "I am very glad that I was compelled to travel, and I will go anywhere *on duty*, but mere travelling is to me a burdensome effort. My cup is full of blessings, and the tonic bitter-sweet infused into it is all needed to temper the pleasant draught."

Amidst the varieties simmering in his brain, we have remarked a lecture on Industrial Museums. It was undertaken by request of the Merchant Company of Edinburgh, and delivered to its members and a large circle of guests in December; the special subject being, 'The Industrial Museum of Scotland in its relation to Commercial Enterprise.' Through the liberality of Mr. James Richardson, Master of the Company, it was printed and distributed widely throughout the country, and was the means of securing valuable specimens. The birth of the Museum he attributes to a conviction, slowly reached, and lying deep in the hearts of men, that industrial museums were a want of the age. The idea embodied in it he represents as fourfold, including the conception of—1. An ample Exhibitional Gallery; 2. Laboratory and Workshop; 3. A Library; and 4. Systematic

Lectures.[1] In regard to the Museum, he urges the duties which Merchant Companies have to discharge, and its claims on their interest, protection, and encouragement. Most heartily did the Edinburgh Merchant Company respond to the appeal, lending influential aid to the success of the Museum, and giving ready co-operation to the schemes of "their own professor," as they were wont to call Dr. Wilson. The delay in erecting the promised buildings for the Museum—a session of Parliament having passed without a vote of money for this purpose—was an intense disappointment, not only to the Director himself, but to many public bodies, whose interest he had secured, and from which memorials and deputations had been sent. The site originally purchased was too small for the necessary buildings, and much harassing delay took place before even a promise of more ground could be obtained. "No amount of business-writing," he says to his brother, "seems to do otherwise than multiply letters, and the endless labour I have had to go through in reference to a better site for the Industrial Museum, makes me sorry for myself. If Argyle Square be purchased by Government, and a noble building erected there, whisper into your grandchildren's ears, after I have become historical, that Uncle George had a hand in that." To his young nieces in Canada, Uncle George was an occasional correspondent. A note to one of them, dated March 23d, contains the following inquiries after truth:—"I am lying in bed, with a beautiful warm blister on one side to keep the cold out, so that I can't venture upon a big sheet of paper. . . . The weather here has been very inclement, and the fields, whilst I write, are white with snow. Two months of such weather are more than we are accustomed to, and you may judge how little it suits us, when I mention that I have only

[1] Arrangements on a different footing have been made since Dr. Wilson's death regarding the Museum; and the Chair of Technology, founded originally at the suggestion of the Professors of the Edinburgh University, and so warmly welcomed by the public, has been suppressed, the link closely uniting Commerce and Manufactures to Science thus being broken. "We require perpetually to transfer knowledge from the wise to the unwise; from the more wise to the less wise; and such a chair as this, with its associated Museum, is what, in commercial language, would be called an *entrepôt*, or exchange for effecting such transfers."—('What is Technology? Inaugural Lecture for 1855-56, p. 15.) It is evident no want of success attended this Chair, though unendowed.

once been in the garden for the last three months, so cold has it been. Who is Mr., or is it Mrs., or Miss Zero, who is always getting up or down in the cold weather? Is Zero black or white, lady or gentleman, young or old? I am told that Zero is a mad milliner, who insists on dressing everybody in white, and painting their noses blue. Is that true? Why is she always letting somebody get above her, or putting somebody below her? Is she a school-girl, and a dux or booby? Is she at school with you? Tell me all about her. They say she has something to do with the freezing point. What's it? Is it the point of the nose, or the end of the fingers, or the tip of the ear? Write me about these curious things. . . . Vivo is at present in deep mourning, having lost by death, Lady Fanny Squirrel, to whom he has long been engaged to be married. Poor fellow, he has waited long, and we hoped it was to have ended otherwise. He talks wildly at times about life being a burden to him, but I don't perceive that his appetite has suffered; and if any other dog sets up chat to him, he draws his sword, and is at him at once. He announces his intention of erecting a monument to the memory of his peerless Fanny, and then he will join the army, and spend the rest of his life fighting against the Turks, *i.e.*, the Cats."

The lectures in the Philosophical Institution, already alluded to, were four in number, their subject being the 'Graphic Industrial Arts.' One of them has become familiar to the public under the title, 'Paper, Pen, and Ink.'[1] Of it we shall have occasion to speak again. Looking back at the session when past, he says, "For the last two months I have been existing rather than living. Sleepless nights; aching limbs; the whole day a chronic *malaise;* and the smallest work an effort. My only painless moments were when lecturing. Then I forgot all, as also, of course, when asleep; but though assuredly I did sleep at times, I never had the feeling of rest, and hour after hour on to three or four in the morning, I wearily rolled about, listening to ancient Job saying, 'When I say my bed will comfort me, then thou scarest me with terrors.' . . . The change of Government compelled me to get up a new set of petitions for the Museum,

[1] 'Macmillan's Magazine,' November 1859.

and I had three troublesome law cases to work at, and a sketch of Edward Forbes's Life to write for the Royal Society of Edinburgh. It is a chapter of the book at which I am now working, and proposing to work at till it is finished. I find it, however, so painful a task, that again and again I put it aside. Now I can look more calmly at the mournful history, and I have much profitable reading for it in botany, geology, and physical geography. . . .

"Time in these telegraph days keeps up with the quickest of electrical flashes. Did I not awake one morning in February, and find myself forty? It is a desperate age for all the good one has done, and I say to myself, 'Had I known I should have lived so long, I would have done a great deal more.' And yet, would I? Perhaps much less, little as it is. . . . I finished, a week ago, my third course on Technology. I have changed the subject each year, and have now completed (?) the round of vegetable, mineral, and animal industrialism, and know my ground. There are fearful gaps to fill up, and a thousand things to learn, but I have had some of the same men all the three years, and have interested even soap-makers in soap-making. But all this is shockingly egotistical. The meaning is, that we have a vocation, and will do our best in it. . . . Have we not all of us a thousand reasons for thanking God that He has been so merciful to us, and that He has given us so much occasion for gratefulness? . . . We are in the hands of God, and know that our Redeemer liveth, and that our life is hid with Christ in God. I have been thinking a great deal about these things lately, and with many reproaches, striving to live nearer the Unseen."

CHAPTER XI.

THE STRUGGLE CLOSES: VICTORY WON.

"So much as moments are exceeded by eternity, and the sighing of a man by the joys of an angel, and a salutary frown by the light of God's countenance, a few groans, by the infinite and eternal hallelujahs; so much are the sorrows of the godly to be undervalued in respect of what is deposited for them in the treasures of eternity."

"Translated into the Kingdom of His dear Son."

"*April* 26, 1858.

"MY DEAR JEANIE,—If you wish to see a lazy man, take Pussy, mesmerize her, and make her clairvoyante, desire her (in spirit) to go the railway station, take a ticket, enter a first-class carriage, and go on, on, on, till she comes to the Bridge of Allan.

"Tell her to get out there, taking care not to leave her parasol or smelling-bottle behind her, enter the omnibus, and request to be set down at Sunnylaw House. When she is there, she will mysteriously tell you that an awful black dog, called Betty (in reality, a very mild canine lady) guards the gate, whilst a connexion of her own, stout and comfortable, basks in the sun, as respectable cat-matrons of her years love to do. She will further describe to you a room with one oriel window, looking south on the bed of a fishing stream and a line of railway, which occupy different heights in a valley rising into a fine sky-line crowned with trees, behind which we see the sun set, and the stars rise.

"Further, after describing a faymale, something like yourself in look, Pussy will signify that there is a spectacled member of

the other sex, lounging in an easy chair, making pretence of studying and working. His name, Pussy will spell for you, if you give her letters of the alphabet, taking care, of course, that she is in the mesmeric rapture, and putting down the whole alphabet before her on the floor. She will then hunt among the letters till she finds one, snatch it up like a mouse, and deposit it in a corner, then another hunt, and another deposit, and so on, till the whole word is made thus: D— O— S— I— E—, which being interpreted reads *Dosie*, a name given to me by, we won't say whom, because I am always in a doze. You will then unmesmerize Pussy, and give her a bowl of cream.—Your loving GEORGE."

Such are the directions given to a sister to discover the spring retreat. Notes to his mother speak of the house as "delightfully situated, looking out over a wide stretch of hill and valley, with something higher than hills on the horizon, a stream in the lowest valley-bed, and fields between, occupied at present by matron sheep with lambs, some black, some white. One patient mother has, by maternal right or adoption, both a black and a white lamb, and I interpret her language towards the thirsty and impatient couple to be

'Drink fair
My piebald pair.'

"I wonder if an American ewe has ever one twin black and the other white? I reckon not. The greatest nation in creation would be endangered by such an event. Poor Blackie would be quickly doomed to Lynch law. . . . Before I left Edinburgh, a friend told me that his late grandmother, when nearly ninety, speaking of heaven, said, 'It was nae for the like of Jenny Brown and her to expect to get far ben; but may be they would get seats on the hinmost[1] benks near the door.' Good old body, I hope she is far ben by this time."

"*Tuesday.*

"As I have not the porcelain tablet[2] beside me, I pick up

[1] Farthest back seats.

[2] Conversation with his mother was often carried on by means of the tablet alluded to. It is now preserved, with the last words he wrote on it, no one being permitted to use it after him.

this scrap of paper instead thereof to write a line upon. I think I begin to mend. Yesterday was a delightful day. My limbs ache less. I sleep better, and feel less languid. The great quietness and serenity of this place calm and soothe me, and the almost entire rest to which I surrender myself, is slowing my pulse, and clearing my brains perceptibly. We have what I have long wished for, a western window with a wide prospect. Lambs and crows, and the sound of running water; the steam-engine whistle, and the lowing of distant cattle, prevent utter solitude. The sky is ever changing, and in the evening a crescent moon and the evening star play at hide-and-seek among the clouds."

From this pleasant life, with "the absence of business-worry, the easy morning's literary work, the long profitable readings and meditations, and the soothing influence of green fields, and blue or sunny skies," he was speedily roused, and cast into the whirlpool of this world's cares. Intelligence reached him while at Bridge of Allan of the death of Dr. Gregory, Professor of Chemistry in the Edinburgh University. He mourned the loss of one so amiable and so accomplished, but did not consider his own prospects affected by it. So passed a day or two, in unconsciousness of the stir on his behalf in town, from which, at last, came a kind friend urgently to insist on his appearing as a candidate for the Chair. The result we shall give as much as possible in his own words.

"*May* 7.

"MY DEAR DANIEL,—The enclosed [a letter to the patrons as candidate] will startle you as much as it does myself. I left Edinburgh three weeks ago, anticipating nothing but a long rest. In my absence Dr. Gregory died very unexpectedly. He had long been poorly, and had scarcely lectured this winter, but no one thought him near death. I had no thought of trying for this Chair, but without waiting for my consent, such a troop of friends, including Councillors, have taken up my case that, *nolens volens*, I am in the field. I look at the matter very composedly. For purely personal reasons, I should rather remain as I am; for others I could change. I shall cheerfully abide

the issue. The suspense is very, very unwelcome, but must be borne. As yet I scarcely feel that I am a candidate.

"*May* 14.

"Many thanks for your[1] good wishes in reference to the Chemistry Chair. A perfect phalanx of friends has gathered around me, and shown me an amount of kindness enough to make proud, and at the same time humble, any man. But as yet I can say nothing of prospects. Meanwhile, don't stop collecting for the Museum. We must make it and keep it famous, whatever happens."

Such suspense was not helpful to physical wellbeing. "I cannot write at length," he says, "for I have an open blister on my right arm, and every now and then it makes my nerves quiver as if my elbow were laid on a Ruhmkoff's coil. This does not conduce to legible writing or elegant composition."

On May 20th, he encloses to his brother a letter of withdrawal, saying, "The enclosed will let you know that I have retired from the Chemistry Chair. I need not tell you that to do this has cost a sore effort. I was sure of the Chair. A large majority of the Council had declared for me. . . . The kindness, respect, and admiration unsolicitedly expressed towards me by people I never saw, have unspeakably touched and humbled me.

"The Chair, you know, was the object of my youthful ambition. A position of honour and influence is afforded by it such as few positions give. Why then refuse it? Simply because it would have been a fatal promotion. I could not have faced the physical labour. So convinced was I of this, that I had no purpose of standing. . . . I accept the issue without repining. We have both been taught in different ways that 'man proposes, but God disposes.' When He took away my health, He taught me to lay aside as unrealizable my ambition; and two years ago I fully resigned myself to see the Chemistry Chair go past me. I should be the most thankless of men if I made light of what is left me, or disallowed the comforts and honours of my present appointment. The one point which more than any

[1] Mr. Godfrey Wedgwood.

other weighed with me was the possibility of my allowing a valetudinarian pusillanimity to keep me from hazarding new duties.

. . . . .

"So farewell the dream that I should fill the Chair of Black, though I should have taken my chance as a public chemical prelector against any of my contemporaries, and not been afraid though the *eidolon* of Black himself had attended *without a ticket.*"

This letter is written apparently with effort, the writing being unsteady. The next to Daniel, of June 4, gives evidence of improvement in the "*write* arm," as he calls it, in its clear, firm characters:—

"Many thanks for your kind letter. By this time you will have learned the issue of the Chemistry Chair election so far as I am concerned. I need not repeat that to withdraw was a sore trial, which is not lessened by finding on every side assurances from Councillors that I should have been unanimously elected. Nevertheless, I do not doubt that I did right. My intellectual vigour is, I think, what it was. My moral faculties are, I trust, disciplined for the better; but my body is frailer, especially lungwards. Even in unusually balmy, genial weather like this, I find walking or climbing infallibly bring on difficulty of breathing and frequently spitting of blood; and in winter, when the weather is otherwise, I scarcely walk at all. In these circumstances, I could contemplate with no prospect of success the cares of the Chemical Chair. I gave way last winter in February, and, till a week ago, have not known what painless existence is for an hour at a time. I can endure this with some (though far too little) patience, but it leaves no surplus for the energetic work of an important Chair. I therefore resign with a composed air, hiding any disappointment I may feel. They are in the thick of the canvass, and I am whirled into it, visiting Councillors. It is work I exceedingly dislike, and it is not made more likeable by Councillors on all sides telling me that I might have saved them all this trouble by not withdrawing.

However, one does for a friend what one would not do for one's-self."

His tone in writing to friends is almost apologetic, so urgent were they that he should stand. The zeal of one Councillor amused him not a little, who replied to an objection on the score of health, "I would give him the Chair though I knew he should die the week after." To Dr. Cairns, whose counsel and sympathy had been precious in those weeks of anxiety, he writes :—

"I left the matter in the hands of God, and my prayer for light has been answered. I am quite satisfied that I have arrived at the wisest conclusion, and am very thankful to be rid of suspense and serenely at work again. . . . It costs an effort to give up an honourable office for which one's life had been a training, and which came within reach in so honourable a way. But I do not repine in the least. On the other hand, I am very grateful for the unlooked-for kindness and respect shown me, and bend my knees in thankfulness to God for His abounding mercies."

During what remained of his life, he became ever more satisfied as to the decision then made, and an increase of his salary, as Director of the Industrial Museum, from £300 to £400, was expressive, so far, of a consciousness of his value. This was his last struggle with worldly ambition, and out of it he came so visibly purified, that his growing gentleness and patience were subjects of remark amongst those who most dearly loved him.

The summer session was wound up by an address given at a conversazione of the College of Physicians, Edinburgh. A few days at St. Andrews followed, when, at the request of his host, Dr. Day, he sat to Mr. Rodgers for the calotype from which the portrait attached to this volume is engraved. The month of August and part of September were spent in a small farm house, near Innerleithen. The only dwelling visible from it is a deserted house at a considerable distance. The Tweed passes before it, and "the little hills rejoice on every side." To be thus alone with nature was a solace to the weary worker, crav-

ing for rest. "We have been here," he tells his brother, "for more than a month, beside the rippling Tweed and the quiet hills, singularly well off in some respects; nevertheless, I have not felt moved to write to you, being too tired after a summer's engrossing work to feel a pen a welcome instrument, and compelled notwithstanding to keep it going for some hours each day. A holiday without any heavy writing is one of the delights I look forward to. Lots of continuous reading in the open air, with many musings over what is read; perhaps a verse or two spun, but the brain upon the whole lying fallow, or getting only a mild top-dressing of intellectual guano, is my lazy notion of a rustical month of holidays. I would have written to you if I had had anything to write, but I had nothing in the way of business, and the reflection on paper of my monotonous life here would give no amusement. I had a faint purpose of going to Leeds to the British Association meeting, which comes off ten days hence, but I don't feel strong enough for the excitement, and won't go. I paid for my Dublin journey last autumn with a sharp attack of splenitis, which pulled me down all the winter; and my weary lungs bleed on the least provocation. It makes me smile grimly to find that I must avoid a volume of 'Punch,' as he makes me laugh at a rate of which my wind organ by no means approves. Here I am resting these troublesome bellows, so as to make them serviceable for winter's work." A volume of 'Punch' was a frequent addition to the books selected for country reading. On one occasion a large parcel, brought to the railway station when starting, was found to consist of four volumes of that periodical. A niece, about five or six years old, shared the pleasure of this study one autumn. Each day after dinner were the illustrations admired by the two together, clear ringing laughter testifying to the appreciation of them, till at last the child declared as her settled conviction, "Oh! Uncle George, I think 'Punch' is the most delightful book in the world!" and that Uncle George was of the same mind she could not doubt.

While at Innerleithen the comet of 1858 began to show itself distinctly to the naked eye, and was often watched from the cottage door as it appeared above a hill directly opposite. At

first George's mother had difficulty in distinguishing it, but one night she announced having seen it. "Did you see it wag its tail?" asked he gravely, as if no other evidence could be received. "Ah! George," was the reply, "the waggery is all in you."

The Memoir of Edward Forbes made some progress this season, but the associations it recalled made it very trying work. "The reading of Ed. Forbes's papers," he says, "continually brings before me the fate of my fellow-students, and often saddens me beyond endurance. I would lose heart and hope myself but for the hope of an endless and blessed life beyond the grave; yet is not the life of Christ enough to show us that on this earth sorrow and suffering are the appointed rule for most (I do not say for all), and may we not suffer with Him that we may rise in glory with Him also? May the blessed Saviour lead us in His own bleeding footsteps to the rest that remaineth for the children of God!"

To Dr. Cairns he writes, after returning to town:—"Greatly did I desire to see you, greatly wish to have a long, long talk about heaven and earth, the world that is, and the world that is to be. . . . Come to see us as soon as you can, and give me the benefit of a long Christian gossip with you. The way of life grows, blessed be God, clearer and clearer to me, and I know Christ better and better, though there is much darkness and despondency still, and weak faith, and downright sin. But I am thankful for much light and peace, and hope for more."

The introductory lecture on Technology for 1858-9 has been published, under the title 'The Progress of the Telegraph.'[1] Under what circumstances the session was opened, a letter to his brother Daniel, of date November 25, explains:—

"Lest to-morrow should prove, like all recent Fridays for a long time back, a letterless day, I take a sheet of paper into bed with me and begin an epistle. . . . In spite, as seemed, of all needful rustication, I was threatened on the very eve of beginning this winter's course with erysipelas in the legs, and had to spend the day before opening in bed. I was induced to think

[1] Macmillan & Co., Cambridge and London. 1859.

that I might require to borrow the deceased Peggy Brown's lapidary inscription, with the due change of gender :—

> 'She had two bad legs and a baddish cough,
> But the legs it was that carried her off.'

The legs got better, but by way of mending the cough, I contrived, forgetting as I always do that I am a damaged locomotive, to fall upon the corner of a thick board, and hit my side such a thump that I thought I had broken a rib. However, it was not fractured, though it has ached and bothered me sufficiently to stop all extra work, including hospitalities and letters. The said cornered board had on it one of the plans for the New Industrial Museum, about which I was much concerned.

. . . . . .

"Students abound this winter, especially juniors. I think myself well off with thirty-five. My class is a very pleasant one. An Indian general, an artillery lieutenant, who lost a bit of his skull (but certainly none of his brains) at Lucknow, an engineer officer, four Indian surgeons, a navy surgeon, a W.S., several young ministers, and a wind up of farmers, tanners, &c. They are a pleasant lot to lecture to, and I have re-arranged my laboratory for them, where we meet comfortably. Only a little better health and—but why complain?

. . . . . .

"Forgive the valetudinarian haziness of this. We are well."

The tendency to erysipelas, of which this letter speaks, continued more or less from that time onwards, and compelled him to even more seclusion than hitherto. Previously it had been his custom to write or read for some hours almost every evening to the sound of the pianoforte, or, as he called it, his "private band." Favourite songs, and morsels of Beethoven, Mendelssohn, or Handel, were encored *ad infinitum*, with an occasional Nigger melody or simple air. A whistling accompaniment betokened the special favourites, work of the lighter kind going on all the while. His love for music has already been spoken of. "Music! music! Some time or other, if not in this world, at least in the next, I will drink my full of it." After hearing Jenny Lind

sing he says: "I was greatly delighted and comforted. Music is an amazing thing even upon this earth, what must it be in heaven?" On first hearing the *Messiah* in Exeter Hall, its effect was so overpowering that he could scarcely stagger out of the place.

But now these pleasures had to be foregone, and the evening spent in bed, where, surrounded by books and writing materials, he carried on his literary work for five or six hours consecutively. Special calls were attended to as before, but all available time was spent in a recumbent posture, with application of lotions. At the close of December he tells his brother: "I have no news to send you of a stirring sort. The winter hitherto has been more than ordinarily monotonous: much of it spent in bed, and much of it in doing work with an effort. This morning I am somewhat seedy, in consequence of an hour and three-quarters' lecture last night at Leith.

"I was induced to give it to help the funds of a Free Church, presided over by one of those pre-eminently good and lovable men, to whom less good and lovable people cannot say No, and who should be taken periodically before a magistrate and cautioned against asking favours from their brethren. Returning from this lecture I speculated, as I suppose you do on such occasions, as to the good such prelections do. In this case I had the comfort of knowing that I had helped to raise £50 for the cause—a consolation seldom to be had. The ordinary result I take to be such as was experienced by a young minister lecturing on astronomy in the south country to an audience of shepherds, etc. He had dilated pretty largely on the immense distances which separate the heavenly bodies from each other, and when his lecture was over, a friend heard two of the shepherds discussing its merits:—'Jock! d'ye believe a' the minister said?' To which Jock replies (*more Scottico*), 'Div ye?' and Tam emphatically answers, 'No ae word!'

. . . . . .

"I am going off to Bridge of Allan for three or four days next week, in hope that it will set me up a bit, and enable me to work with less sense of oppressive dulness than has been the case hitherto."

"BRIDGE OF ALLAN, *December* 29, 1858.

"MY DEAR MOTHER,—'How did Tubal-Cain first learn to work iron?' I was about to have that momentous question answered when the train reached this, and had to hurry out without receiving a reply. The chance of having the problem stated above made clear, is not likely to occur again. I may, I think, make up my mind that I won't, however long I live, find any one in a condition to tell me how Smith the first learned to hammer iron. Yet my neighbour in the railway carriage, whom Uncle could not fail to recognise as having something antediluvian about him, seemed to know all about the matter. We had been talking about iron-manufacture, when suddenly referring to a supposed improvement which a very ignorant person had, as he imagined, 'introduced' into iron-making, not aware that the practice was immemorially ancient, my fellow-traveller said to me, 'Why, Tubal-Cain found that out *the second day.*'

"Well, thought I to myself, if you know what T. C. did the second day, perhaps you can tell me what he did the first, and so I put the question which begins this note. I lost the answer, but I don't think, though I had gone on to Aberdeen with my good friend, I would have got more than an oracular response. He could answer other questions, however, and is largely to help the museum, for which I begged all the way.

"We are in quiet comfortable lodgings. I am steadily progressing with my lectures. To-day is magnificently bright, and we shall presently visit Dunblane.

"Your loving son GEORGE."

On the first Sabbath of 1859, he tells Dr. Gladstone:—

"I found your kind and welcome letter awaiting me here on my return from Bridge of Allan, where Jessie and I had four very quiet and pleasant days. I have not felt up to the mark at all this winter. . . . My worst complaint is a readily-recurring hæmorrhage from the lungs, which, though passive rather than active, none the less steals the life-blood away, and is the cause, I suppose, of the sense of weariness, good-for-nothingness, slough-of-despondness, as May, I imagine, would call it, which

has lain heavily upon me. I ran away to the Bridge of Allan to mend this, carrying with me Jessie, a Bible, the Life of Milton, the Life of Douglas Jerrold, Miss Adelaide Procter's Lyrics, four or five volumes on chemistry, and paper, pens, and ink. I studied some six hours, meditating and simmering over the metals on which I am to give four special lectures, and wishing a dozen times that you and other chemical friends were within call. I read Jerrold, a bit of Milton, and lots of Miss Procter, wrote out nearly a whole lecture, moralized and chatted with Jessie, visited the magnificent neighbourhood, dined early, went to bed early, and came back decidedly the better of my journey.

"I have done little this winter. You will receive one of these days a new edition of the Electric Telegraph, also a lecture on it. I raised a little money for a school by a lecture on balloons, and helped at a very pleasant meeting to raise money for the Special Indian Missionary Fund, and took a hearty part at another assemblage intended to establish a Medical Missionary Dispensary, where the young men will be trained as medical practitioners and evangelists at the same time. It is a step in the right direction, and I hope will prosper.

"When I heard of your lighthouse appointment, I said they have selected John Gladstone not to look after the lights, as I daresay he imagines, but to look after the b(u)oys, whom he has done so much for at the Bloomsbury Branch. Here I will not touch upon secularities. About coloured lights, etc., I will trouble you with a week-day letter, containing some chemico-physical speculations. This is a Sabbatic one.

"I rejoice to hear of your success with the young men. God bless you in your work! It is worth all other work, and far beyond all Greek and Roman fame, all literary or scientific triumphs. And yet it is quite compatible with both. Douglas Jerrold's life is most sad to read. In many respects it gave me a far higher estimate of him morally than I had had before. Indeed, I did not pretend to know nor to judge him, but I fancied him to have been a less lovable, domestic person than he was. But what a pagan look-out! What an ethnic view of this world and the next! He might as well have been born in

the days of Socrates or Seneca as in these days, for any good Christ's coming apparently did him. There is something unspeakably sad in his life, and it was better than that of many a *littérateur*. The ferocity of attack on cant and hypocrisy; the *girding* at religion, which they cannot leave alone; above all, the dreary, meagre, cheerless, formal faith, and the dim and doubtful prospect for the future, are features in that littérateur-life most saddening and disheartening.

"And the men of science, are they better? God forbid I should slander my brethren in study, men above me in intellect, capacity, and accomplishment. I delight to know that so many of them are Christ's willing followers and beloved servants. But recently I have come across four of the younger chemists, excellent fellows, of admirable promise and no small performance. I was compelled to enter into some religious conversation (not discussion) with them, and found them creedless. I don't mean without written or church creed, but having constructed no 'I believe' for themselves. Standing in that maddest of all attitudes, viz., with finger pointed to this religious body and that religious body, expatiating upon their faults, as if at the day of judgment it would avail them anything that the Baptists were bigoted and the Quakers self-righteous!

"These scientific brethren of ours watch us, no doubt, not in an unkind, but still in a critical and unconsciously analytical spirit, and see the motes in our eyes as the spots in the sun. And are they not entitled to count these spots? and can we blame them for judging us as lights, which we ought to be, and demand that the light that is in us be not darkness?

"Oh to tell them kindly and wisely not to try themselves by us, who are but dim and tarnished reflectors of the Divine brightness, staining and colouring the few rays we do retain, instead of sending them back pure and white as they fell upon us, but to look to Him who is light, and in whom is no darkness at all; and when they find that they cannot look on that awful splendour and live, to turn to Him who is the brightness of His Father's glory, yet so veiled in sinless flesh that all live the better by looking to Him, and none indeed truly live otherwise than through and by Him who is the light of life.

"I see I have been rhapsodizing, but I don't often do so. I hope one of these days for an opportunity of addressing the devotional meeting of our Edinburgh University students. If so, I shall try to urge the scientific class to believe in Christ as the Head of the Schools of Science as much as of the Church called by His name, and to ask the *littérateurs* what the tongues of men and of angels will do for them if faith, hope, and charity, are not in their hearts, and the greatest amongst the three—charity.

"Send me the Recreation Essay. As a nation we are, I suppose, the worst in the world at keeping holiday. We take our pleasure sadly, and the sadly changes wofully fast into sinfully.

"The Total Abstinence Society here wanted me to speak at a great Centenary Burns meeting, but I was glad that I had a previous engagement. I wish the abstainers all success, but their merits and those of Burns belong to very different categories. I could not praise them together, and to make a memorial celebration of Burns an occasion for pointing morals from his sins, is, I think, a duty not asked by God or man at our hands. I refer to this as an unfortunate endeavour to turn a holiday into a fast-day. Let holidays be holidays. I count on a copy of your paper.

"The best of good wishes to May, and love the fondest, best, and truest to A., till Valentine's Day come. Secularities another time. I will allow my letter-conscience a small siesta. Jessie sends a Christmas-box full of love.

"Your affectionate friend, GEORGE WILSON."

To Dr. Cairns he speaks of the time spent at Bridge of Allan as "four delightful days of rest and recruitment of body and soul, including, or rather included in, 'rest in the Lord.' Since returning, I have been greatly better, and I am now workably well. A load of labour has saved you the infliction of a letter hitherto. . . . I was at a very delightful devotional meeting of medical students in the University on Friday night. They asked me to preside, and after in vain trying to write a suitable address, I resolved, in God's strength, to speak from my heart to theirs, in the name of Christ, and it pleased the blessed Spirit to give me some utterance for them. I am to preside next week

at a very different meeting, viz., one of the Burns Centenary meetings. I was asked to take part in two, which I declined. I agreed to become a steward at the Music Hall, as the quietest way of escaping; but a week ago the Trades' Delegates came to me as Industrial Professor, to take the chair at their meeting in Queen Street Hall, and I agreed, provided the Music Hall people would let me off. This they reluctantly did. I shall be criticised and condemned by certain religious people for this step, but my conscience approves it. The duty has come in a fourfold way to me. I think it is quite possible to commemorate the birthday of Burns without being guilty of idolatry, or partaking in his sins. I think, moreover, that I may give the meeting a bias in a direction no Christian will lament, and which another might not do. I have made it matter of solemn consideration, and I hope your prayers for me will not be wanting." Of this meeting he says to his brother, "I believe I may honestly say that, as a continuous success, it was the best meeting in Edinburgh. The only shadow of mishap was occasioned by an ill-timed allusion. . . . Otherwise a more decorous, cheerful, hearty meeting, I never was at, and the old man Glover (a gauger, and now a centenarian), who appeared at it, was a wonder himself. The scene between him and me—for to me he addressed all his remarks—was described by those who were onlookers as amusing in the highest degree. He asked me, among other things, if I 'kent what a clachan was;' and after dating some event by the year of the great storm, suggested interrogatively, 'But that wad be afore your time?' I asked the year: '1795!' The quiet manner with which he told of his supplanting thievish carriers who tapped the rum puncheons between Edinburgh and Dumfries, and how 'nae bung started wi' him,' was great, especially when he added, '*but I had a gimlet!*' . . . I write this in bed, far on in the night. Here we are all well."

Of the students' devotional meeting spoken of in a previous letter, a record remains in a few notes, apparently written in haste, and of which only the closing head can be clearly made out. It is as follows, and is suggestive enough: "V. This Blessed and Adorable Saviour, the Elder Brother, the Master, the Redeemer, the Life-Giver, the Judge, the Atoner, the Crea-

tor, the Teacher." It was confessions like this that led Dr. Alexander to say, "I have often felt as if there was something sublime in this man, with his fragile frame and modest attitude, standing amongst the aristocracy of science, or before some popular assembly, or in the presence of his students, and calmly, unostentatiously, with the simplicity of a child and the unfaltering confidence of a confessor, giving utterance to the sentiments of faith and worship that came, as from his inner soul, spontaneously from his lips."[1] The grace with which illustrations from Scripture were introduced into his public addresses was peculiarly his own, and the reverential love with which all was evidently laid at the feet of the Saviour, had something triumphant and joyous in it, elevating for the time the most thoughtless of his audience. He had the power, so rare even among earnest Christians, of consecrating to God every act of business, thus offering the devotion of a worshipper as truly in his laboratory and lecture-room as in the sanctuary. To those who were privileged to join in prayer with him, this was most apparent. In the morning there was the petition for help, support, and guidance, and in the evening the calm offering up of all the acts of the day, to be purified and accepted for the sake of the great Mediator. Few mannerisms marked his prayers, but two desires often found expression, "that in all things Christ might have the pre-eminence," and that "having begun in Christ, we may end in none else." Jesus was the "Alpha and Omega" to him, and therefore did his light shine clearly before his fellow-men.

Reference has been made to preparation of lectures during the Christmas week. They were the last he delivered before the Philosophical Institution, four in number, 'On the Metals in their Industrial Relations.' This was the eighth course of lectures addressed to the audiences of this Association, and it might have been imagined they had had enough of him. Men of the highest eminence were on their staff of lecturers, and many from a distance to whom novelty lent a new charm; yet so far from becoming weary of George Wilson during the fourteen years that he appeared before them, they seemed to think

[1] Funeral Sermon, by Dr. W. L. Alexander, p. 28. A. and C. Black, Edin. 1859.

the last course better than the first. His own mind was ever amassing fresh stores of knowledge, and he delighted to make a feast of these for his brethren. Again and again, too, did he come to their aid, on very brief notice, and at considerable personal inconvenience, when a lecturer was unable to fulfil his engagement to them; and of this they had a most grateful sense.

After a professional visit to Newcastle in the beginning of March, he tells Dr. Cairns, "Since I came back I have been discoursing to Dr. Candlish's Bible-class, by his request, on a physico-theological subject, and I have promised a word to the Congregational Soirée of Lady Yester's. It is pleasant even to sand the floor, or change the sawdust carpet of the outer vestibule of the house of God. Would that I could only give them a word in season!

"I am better than I was earlier in the winter, but constantly visited by returns of hæmoptysis, and compelled to be very wary and watchful.

"I ask myself often, whether it is mere languor and stupidity, or anything deserving to be called becoming contentment and composure, that keeps me from complaining and repining. I hope there is a little of sincere gratefulness to the Giver of all good gifts; but there ought to be, and might be, a great deal more.

"When are you coming to stir me up? You owe me a return for staring out of the window of the railway carriage at Berwick, in hope of seeing you."

Shortly afterwards, though "terribly over-worked, and far from well," he had to visit London professionally, and was unable on this account to be present at the meeting in Lady Yester's Church to which he alludes. On the journey up, the lamp in the railway carriage went out. While his companions slumbered, or chatted together in the darkness, "I fell to musing," he says, "and then to trying how many verses of the Bible I could recall. I was very sorry to find I knew so few, but glad also to find I knew so many." During the week spent in London, he accomplished what one of his coadjutors asserted would have taken three weeks in any hands but his. "I have

been counting my visits, and find that I have been four times at the Department of Science and Art, four times at the Office of Works, twice at the Council of Education, and once at the Treasury, besides all the other doings. I was much knocked about, but the weather was good, and the absence of lecture-work saved me from suffering."

Retiring to the country during the few weeks' interval between the winter and summer sessions, he for the last time visited his spring resort. Dr. Gladstone, to whom the following letter is addressed, had shortly before been appointed as one of the Commissioners for the inspection of lighthouses :—

"BRIDGE OF ALLAN, *April* 20, 1859.

"MY DEAR LIGHT, BUOYANT, AND BEACONAL ROYAL COMMISSIONER,—From the moment I set foot in Edinburgh on my return, till three minutes past four o'clock, Greeenwich time, yesterday, when the guard whistled, the bell rang, the engine snorted, and the train 'for the North' started, I have not known what the feeling of rest was. When one piece of work was completed, instead of the trumpets playing 'See the Conquering Hero comes,' the drum-major, or some other noisy fellow shouted out, 'Silence in the ranks.' *Order of the Day,* 'G. W. to be in two places at once, to do three things at the same time, to have as many hands as a Hindu god, and all his Sabbaths to be merely Sundays.' *By command.*

"In consequence of this order I have been showing the Museum to the Duke of Argyle's family, whilst I was giving evidence in a court of law on the nature of sea-water, and examining the candidates for an agricultural diploma, and visiting the glass-works with my class, and lecturing to the assembled teachers of Glasgow, and studying calico printing with Mr. Walter Crum, and writing certificates for my class, and adjudging prizes, and reading a paper to the Royal Society of Edinburgh on Cavendish, and paying away lots of money; besides many other things too numerous to mention.

"In sober seriousness, I have seemed for the last three weeks to hear a little imp constantly dinning in my ear '*what next?*' and it was not one next, but a long line, the most of which I have either disposed of finally, or at least chloroformed, and left

behind in a state of anæsthesia, guaranteed to last for a fortnight. The more pressing and clamorous I have brought with me, and am polishing off, beginning with your letter.

"At the sea-water[1] trial I was asked a question, which I administer herewith to Lady May, with a view to test and strengthen her intellectual agility, subtlety, and profundity. 'It being admitted that the fresh water flows from mouths of rivers far out into the sea, and is found floating fresh in the open ocean, and you (G. W.) showing a manifest tendency to define a stream of fresh water as a river, I (the cross [sometimes very cross] examining counsel) ask you, if you call such mid-ocean fresh-water a river, *what are its banks?*' The questioner, in this case a good-tempered, very sharp fellow, thought he had me, and all in court, as my German teacher used to say, 'pricked vell up their ears.' I was totally unprepared for the question, but one of the little turnkeys who keeps the door of a memory-cell hastened to my help, and prompted by him, I replied, 'Lieutenant Maury declares that the Gulf Stream is a river of hot water flowing between banks of cold; mine is a river of fresh water flowing between banks of salt water.' The Court smiled applause, and with a courteous glance from Advocate Crux, I vanished from the witness-box.

> "In conclusion I may say,
> Fresh-water won the day,
> Which holds out the prospect of much better pay.

"Besides the multitudinous labours referred to so modestly on a previous page, I have to mention that I addressed five copies of Colour-Blindness to the Millbank Street office. I hope the commissioners will make 'Light' of paying the carriage.

"You ask for my health. I was decidedly the better of my visit to London. The stoppage of brain work; the spectacle of the great bee-hive, with all its drones and workers, honey-makers and honey-eaters, its constitutional queen, and assaulting wasps, always immensely exhilarating to me; the contact with the great little men who rule the world; the handling of that most wonderful invention red tape, which, according as you will, is so strong, that a Samson could not break a thread of it,

[1] The question at issue was, 'What is salt and what is fresh water?'

and so weak, that if you breathe on it, it disappears like heated gun-cotton; the gazing face to face, and as one always feels, perhaps for the last time, at the good Faraday, and other great, lovable, or at least admirable men; the long profitable chats with the landlord of the Tavistock;[1] the genial controversies with Lady May, leader of Her Majesty's opposition; the sweet face of dear A. There! I have got to the top of the hill, and I must stop a bit to recover my wind. All these London experiences did me good, especially as my Sabbath at Cambridge was, though a sad, yet a pleasant modulation in another key, of the London strain.

"The change of weather has a little undone that good, yet I don't think seriously.—Your affectionate friend,

"GEORGE WILSON."

Ungenial weather lessened out-door pleasures while in the country. "The hills all round, and even low down, had white mantles yesterday, and some of them are slow to part with them to-day. The only plants that appear to enjoy the weather are the snowdrops, and they come ready-made out of the sky." "Snow, rain, and hail, have apparently been recommended change of air, and come here in search of it. The day before yesterday another stranger, High Wind, Esq., whom I never met here before, paid the village a visit, and made a great row; but he has packed up, and I hear nothing of him to-day.

"I brought with me an aching arm, which, had it been a leg, I should have declared was suffering from gout. To-day, however, I am better, and the peace and quietness are, as they always do, doing me good."

At the close of May, in writing to Dr. Cairns, he alludes to the physical languor felt throughout the previous winter, and adds, "I cannot say that morally I have spent an unhappy or an unprofitable winter. The powers of the world to come draw nearer to me than ever, and stand in a more benignant relation.

"I have become wondrously indifferent to the praise of men, but increasingly anxious to do my daily work, which is far from unpleasant, honestly, heartily, and earnestly. I would count it

[1] Dr. Gladstone, his host, was then resident in Tavistock Square.

no healthy token if I shrank from daily work. Far otherwise, I wish I were ten times stronger and healthier than I am, to do ten times more work in the great Taskmaster's eye. But in spite of many disheartening and even distressing things, and cares, and fears, and sins, I have tasted so largely of the mercies of God; the all-attractiveness of the blessed Saviour's character, and the perfection of his example, have risen more recently into such prominence before me; and the sense of a higher presence, enabling me to enter into communion with God, and to pray acceptably unto Him, has so filled my heart, that the things of this life arrange themselves according to a new perspective, and seem much smaller and farther off than they did before.

"After a year's experience, I have every reason to be satisfied with my decision about the Chemistry Chair. I have never once repented it."

"*July* 20.

"I have been very busy, with a good deal of work connected with my office.

"In health, however, I am wonderfully well, and abundantly cheerful. I have had the opportunity this summer of taking part in several meetings of a religious character, and have felt more faith, and courage, and comfort in being at them, than I think I ever did before.

"I have increasingly to thank God that He makes my path clear to me, and that to spend and be spent in Christ's service is my chief desire. These are not things I write about to almost any one but yourself, and they are rather, as I always feel, to be buried in one's own heart, or brought out in prayer to God, than given to the light openly."

During this spring and summer one or two scientific papers were read to Societies. One addressed to the Royal Society has already received notice;[1] another was read to the Photographic Society;[2] and a third to the Botanical Society.[3]

[1] 'On the Recent Vindication of the Priority of Cavendish as the Discoverer of the Composition of Water.'—R.S.E., April 1859.

[2] 'On Dryness, Darkness, and Coldness, as means of preserving Photographs from fading.'—'Journal of Photographic Society, 1859.'

[3] 'On the Fruits of Cucurbitaceæ and Crescentiaceæ, as Models of various articles of Industrial Use.'—'Trans. Botan. Soc. 1859.'

The month of August was spent in Burntisland, as reasons, to be found in subsequent letters, made it unsuitable for him to be at a distance from town. A letter to Mr. Charles Tomlinson, London, written on paper with the University stamp, gives one reason.

"BURNTISLAND, *August* 8, 1859.

"CARISSIME CAROLE,—See, my dear friend, what a pass the Emperor of the French has brought us to! The University of Edinburgh transferred to Burntisland, which after all is not an island, and therefore not a burned one, but only a Trappean Peninsula, which looks out from the Kingdom of Fife, across the Firth of Forth, to Arthur Seat and Edinburgh, and invites the latter to dip its hot face and sun-stricken brains beneath its cooling waters. In short, as there can be no manner of doubt that the French are by this time half way across the Channel, the University of Edinburgh has thought it proper to put its valuables in safety, and accordingly—but modesty prevents me enlarging on the topic—the Professor of Technology is secure here for this current month." A more sober reason given is, that "the lease of my laboratory has expired, and the New Buildings are not (Hibernicé) begun, so that I have before me the formidable horrors of a flitting. The bother of this is very considerable, and is one reason for my keeping so near Edinburgh." "We in Scotland call a removal 'a flitting,'" he tells Mrs. John Gladstone, "I suppose on the antithetic principle that it is a process as totally unlike the flitting of a butterfly or a bird as can well be conceived; and where all the contents and machinery of a laboratory must be transported, it is no easy matter. But fancy, further, that whilst turned out of my old den in the middle of September, I have no new one to go to. A butterfly preparing to flit from one rose to another has nothing to pack up (or roll up) but its trunk, and is certain to leave none of its goods behind, but if, after deserting its ancestral rose-leaf, it should find that it had left the 'last rose of summer,' and that there was no other to receive it, it would doubtless find itself in a sad predicament. In such a predicament am I.

"I have been in a heap of worries. This is worry the first, and most tiresome. . . .

"With all this, let me not forget to say that I have enjoyed a peace and composure of spirit, interrupted only by a few impatient bursts, such as I have seldom known. The meaning of Life, the purpose of God, the worth of this world and the next, have all risen into a prominence which they had not formerly displayed. I was not expecting or seeking this. It came upon me like the wind blowing where it listeth. I have rejoiced to welcome it, but it has for the time driven me rather in upon my own thoughts than led me to pour them forth to others.

"I should add [as an excuse for not writing] that I have an immense deal of official correspondence to keep up, which devours the writing faculty, and also that I am trying to be done with the Memoir of Edward Forbes. There, however, some of those who should have been foremost to help have forgotten their promises. . . . I am sickened at the work."

To his cousin Alick he gives an epitome of his engagements since spring. Amongst them is a lecture in Glasgow, which has been noticed already in the list of things to be done all at the same time. The lecture was requested by an Association of Teachers. "It was a capital audience, and I had prepared with some care an hour's written discourse on the 'Educational Value of Industrial Science.' I had also, however, taken with me a sort of appendix, consisting of the best part of an old lecture; and when the hour was done, I left them to say whether I should stop or go on. They left me in no doubt as to their choice, so I gave them another half hour, in which they heard some things which I hope would do them good. . . . It is curious the feeling of having an audience like clay in your hands to mould for a season as you please. It is a terribly responsible power. . . . On looking back I am struck with the little good I *know* these performances to have done, or can on the highest estimate suppose them to have effected.

"Against that, however, I can set off a steadily increasing indifference to applause or commendation. I do not mean for a moment to imply that I am indifferent to the good opinion of others. Far otherwise; but to gain this is much less a concern with me than to deserve it. It was not so once. I had no wish

for unmerited praise, but I was too ready to settle that I did merit it. Now the word 'duty' seems the biggest word in the world, and is uppermost in my serious doings. I must not deny that this feeling is helped by bodily quiescence, to use no stronger word. My physical activities and locomotive powers steadily abridge their circle of energy. I am thus debarred from the restless life I would otherwise lead, and I fear sometimes that I set down to rational contentment what is only lazy valetudinarianism.

"Yet I have a peace of mind and a calm joy, when not positively suffering (and then they look through the darkness) such as I did not know before. Of such feelings it is not wise or safe to write. They suffer by handling, and I say no more about them. I was trying to make a clean breast of it, and have only achieved this long drone. Set it down in part to an aching arm, and the anti-rheumatic practice it demanded. . . .

"I hope to be at the Aberdeen meeting of the British Association a month hence, and if so, will write you all about it."

One more quotation from Burntisland letters; it is addressed to Dr. Cairns:—"In body and soul I am at peace with God and man, thanks to Him who giveth us the victory over all our enemies. That wondrous 15th chapter of 1st Corinthians! It stirs me like a trump of doom. I cannot read it aloud without finding my voice break down; all the immortal dead I know seem to gather about me as its mingled pathos, and jubilation, and summons sound out from its solemn diapason. Tears and confession and thanksgiving take the place of articulate didactic words, and the image of the heavenly obliterates all else.

"It would be a very great kindness if you could lend me your sermons on as much of the Corinthians as you please, but especially those on the Resurrection, the physical aspect of which has much occupied me, and been twice *preached* upon."[1]

The hope of being present in Aberdeen at the meetings of the British Association was realized. A house was taken, five

[1] A friendly debate on these Sermons on the Resurrection, which were talked over amidst the hurry of the Aberdeen Meeting, was the last discussion held by those friends in this world.

friends from England forming with George Wilson and his sister a most pleasant family party, of which many happy memories remain. A pretty full account of the doings of the week, so far as George was concerned, is given in writing to his brother.

"*September* 23, 1859.

"Jessie and I got home last night from Aberdeen, where we have spent ten delightful days, and before going in to the galley oar again, I send you some account of our doings. . . . My paper[1] [to the Chemical Section] will not at present be published even in abstract; but I believe it to contain some curious, novel, and important observations on the ancient history of the Air-Pump. I had the pleasure of seeing Faraday, Graham, Christison, Gassiot, Robinson, William Thomson, De La Rue, besides others, listening with interest, and we had profitable talk about it after. To dispose of myself:—I read to the Natural History Section a brief paper on the Gymnotus,[2] as used by the Indians at the present day to give shocks. Two of the Gymnoti are coming *alive* to me next summer.

"In the Statistical I gave them a blast about Colour-Blindness,[3] preliminary to moving for a committee to inquire into the statistics of the question on a large scale. I have got the committee, and £10 to carry out the scheme. In the Chemical Section I also read a paper for Walter Crum, and one for James Young. Altogether I was more than satisfied with my share in Association work, and fulfilled every personal project that took me there. . . .

"My lungs warned me, by some ugly bleeding early in the week, to be careful, so that I did not go to Sir R. Murchison's Lecture, or to the first Conversazione. The second lecture by Robinson of Armagh was a great treat, or rather, I should say, the experiments were. They were exhibitions of the electric spark on the largest scale, including all the kinds of electric light, the apparatus being brought from London, and of the

[1] 'On some of the Stages which led to the Invention of the Modern Air-Pump.'—'Report of Brit. Assoc. 1859,' p. 89.

[2] 'On the Employment of the Electrical Eel, *Gymnotus Electricus*, as a medical shock machine by the natives of Surinam.'—Ibid. p. 581.

[3] 'On the Statistics of Colour-Blindness.'—Ibid. p. 228.

finest kind. . . . The beauty of some of the lights is so great, that I could not help uttering, when I saw them, a cry of joy. They are good for any man to see—poet, painter, philosopher. He ought to get good from them.

"There were two Museums, one Archæological, the other Geological, but my lungs would not allow me to visit either. I went to the second Conversazione solely to see the electric lights again, and after witnessing them went home."

His warm sympathies were called forth at this time on behalf of one of his colleagues, Professor Kelland, whom he had hoped to meet at the Aberdeen meetings, but who, instead, was lying with fractured limb at a railway station, near which a collision had occurred. On returning home, George sent him a full account of proceedings, as the only method open to him, of sending a ray of light into the sick-chamber of his friend. The letter has been published in full;[1] we take from it in part to complete our sketch. "I write you mainly to ask if I can do anything for you, and to beg that you will not hesitate to command me to the utmost. It will be the greatest pleasure to serve you in any way; meanwhile, I note down a point or two about the British Association at Aberdeen, which may not be uninteresting.

"We had a numerous meeting. Great are the attractions of a Prince, and had he [Prince Albert] remained throughout the week we should certainly have had to hold our meetings *al fresco*, and to *bivouac* in the open air. Wisely, however, he gave but one day to the sections, and the stir moderated thereafter. . . . We had a Red Lion dinner on the Monday, when Owen presided, and about sixty men from all the sections sat down. We broke up very early, but not before Blackie had astonished them with one of his songs. I welcome these dinners for the opportunity they afford of seeing men you have long known by report, and wish to know better. . . . I spent a very happy and instructive week, and came back a lowlier man. These meetings ought to make one humble. I hope they made me so." At the Red Lion dinner Professor Blackie caused astonishment otherwise than by his song, in coming from one end of the long room

[1] 'North British Review,' Article 'Professor George Wilson.' February 1860.

to the other in order to enfold George Wilson in a loving embrace.

On returning to town, the difficulties to which he had been looking forward, in making preparations for the winter, came in full force. The number of visits to lawyers and others, and the necessary worry kept up till the very day his lectures began, were very wearing out, and a poor preparation for the labour and excitement inseparable from an opening session, of which he had said long before, "At the beginning of our session I have always more to remember than I can call to mind. . . . Its constant high-pressure work has left me with great weariness both of soul and body."

Where he was to deliver his lectures remained an unsolved problem till near the close of October. By the kindness of Professor Donaldson, however, the use of the room he had occupied in the University, and which he was quitting for the new Music-Room in Park Place, was obtained. So little time was left, that only by constant importunity and much annoying labour was it got ready in time, the introductory lecture being delivered with wet walls, and with carpenters' shavings on the floor.

To his life-long friend Professor Christison he was under even greater obligations, as his laboratory within the University walls was given up by him to Dr. Wilson for the winter. Here was a circle completed: the youthful chemist who in that very laboratory first obtained familiarity with the practice of his favourite science, now returning to it as one whom men delighted to honour, with, in his turn, young and ardent students working under his directions. It was found to be too small to accommodate Dr. Wilson's numbers, and a second laboratory, also within the college, was fitted up, but never used, the arrangements in it being scarcely completed when the session began. His opening lecture was on "Technology as a Branch of Liberal Study," and was chiefly devoted to illustrations of the benefits resulting from science and art, theory and practice, doctrine and work, acting and reacting on each other. Viewing his own Chair as in some measure the uniting link between the two, he considered historically the evils resulting from every

attempt at a monopoly in knowledge, as, *e.g.*, with the monks and knights of old. Even the Universities of Christendom had been tainted with the spirit of selfish exclusiveness; and thus the "intellectual blood which should have flowed in the veins of the World, was left to stagnate in the Heart, and paralyse its motions."

The plan and purpose of his Chair, and the Museum in connexion with it, are more fully developed in this lecture than in any previous one; and, as befits his intermediate position, he pleads, on the one hand, that scientific knowledge be extended and made serviceable to every practical worker; while, on the other, he shows what claims the workers in pure science have on the gratitude of all.

The crowded audience on this opening day seemed to give him a new welcome, and open before him a bright vista of useful and honourable service to his fellow-men. Each succeeding day confirmed the promise of this one, till the difficulty came to be how his audience could be accommodated in the lecture-room. The disadvantages of previous years in regard to such matters became more than ever obvious, and it was felt that now, for the first time, Technology was having fair play. So passed the early part of November, each day adding to the roll of pupils, and he exhibiting an energy and freshness surprising to those who knew the state of his health, the hæmorrhage, which had increased to more than the usual extent for two months previously, being accompanied by sadly diminished appetite. But his buoyant cheerfulness compelled one to forget all this, and, while in his presence, to share the happiness of which he had apparently a store not only enough for his own needs, but to spare for all around him. "It is a becoming act of Christian thanksgiving," he wrote to a lady on her birth-day, "to acknowledge God's kindness in granting us so great a gift as life." Not the less did he feel this that he never looked forward, but sought, from the time of entrance on his public career, to "live as a dying man; the best preparation for a happy life; the best preparation for a peaceful death." "I spin my thread of life from week to week rather than from year to year." About six months previously, when visiting his friend, Miss

Abernethy, he said solemnly to her on parting: "Janet, I am trying to live every day so that I may be ready to quit on an hour's notice." More strongly were his desires apparent in the few words he addressed to her nephew, Dr. Niven: "I am resigned to live." Such readiness for both worlds is difficult to realize. This life seemed to him so full of exhaustless springs of delight, that the only way of reaching in thought his elevation, is by entering into the spirit of his favourite words: "To be with Christ is far better."

It has been supposed by some that he had at this time a presentiment of death being close at hand. This has originated in their knowledge of some of those expressions of consciousness of his physical liabilities, which were frequently used by him. Further than that he was aware his time on earth could not be prolonged *much* longer, we believe he had no presentiment such as has been imagined. In October he writes: "I find myself steadily getting weaker, and less fit for work. Constant attacks of bleeding from the lungs sap my strength, and warn me how easily I would give way under any acute attack of illness. I am cheerful enough, nevertheless, and it may please God to prolong my days, but I am compelled to look gravely at the opposite possibility."

He has himself been the narrator of his life. Once again, and for the last time, let us listen to him telling his brother how the busy month has passed:—

"ELM COTTAGE, *Nov.* 17, 1859.

"MY DEAR DANIEL,—I have determined not to let another week pass without writing, although duty seems to say, 'Write at your lectures,' and a pair of barking lungs bid me lie down and sleep. I write in bed, which is the explanation of any zig-zagginess you may perceive in the slope of the words. I am thankful to creep early to my couch, but I don't 'turn in' till about 1 A.M. generally.

"We have had a month of great excitement, in which I have had my full share. First came, as a sort of preliminary gymnastic, an address to the Pharmaceutical Society.[1] Then the

[1] 'The Education of the Pharmaceutical Chemist.'—'Pharmaceutical Journal,' Dec. 1859.

Brougham Banquet set us all astir. It was a totally unsectarian meeting, and, so long as I was able to remain, it went off famously; but I lost, I believe, the second-best speech, that, namely, from the Lord Justice-General M'Neill.

. . . . . .

"Two days after, came on one day the installation of Sir David Brewster, as Principal, and the election of Chancellor and Graduates' Assessor (*i.e.*, representative in the University Court). The former the Senatus had all to itself. . . .

"Well! carrying our newly-made Principal with us, we adjourned to the Music Hall, where, by a dreadful, but unavoidable arrangement, we were locked in, after the voting began, and had to listen to a roll of 1300 names read over. However, it was an interesting scene, which I witnessed to advantage from the platform. . . . The votes for Chancellor were watched with immense interest, till it was quite certain that Brougham must win; and then the faces showed, like sun-dials, which Star they obeyed. I admired the pluck of the defeated men about me. It is a grand feature in *our* national character, and is not in the Yankee nature, to submit to a majority, and take a fair defeat uncomplainingly. . . .

"Next week came the opening. I hope to send you with this Sir David's speech. He gave me a good word, which the students took in hearty part.[1]

"The day after, our separate classes began. I lectured for Kelland at 10 o'clock, and for myself at 12. You will be happy to learn that he got back to Edinburgh on Saturday from Hitchin, near London, where he has been lying for nine weeks with a compound fracture of the left leg, above the ankle. I found him very hearty and cheerful. He gave me a most graphic account of the railway smash, and what befell him, ending, as one likes to hear a man end, with saying, that he had no idea there were so many kind people in the world: that everybody had been kind to him.

"When I came back from Aberdeen, I wrote him an account

[1] Sir David, in speaking of the Chair of Technology and the Industrial Museum, refers to their being "under the guidance of Dr. George Wilson, one of our most distinguished philosophers."—'Introductory Address by Sir D. Brewster, on the Opening of Session 1859-60,' p. 17. Constable and Co., Edinburgh.

of matters there to amuse him, and added, that if I could do anything for him I should be glad. It never, however, entered my head that he would ask such a non-mathematician as myself to open his classes for him. When he did I could not refuse, and I am glad I did not, for the lecture was graciously received by a crammed class-room, and the class has not fallen off in numbers. Neither has my own class suffered. To get all ready I have, indeed, had a battle, which would only have exhilarated me had it not overtasked me physically, and ended in giving me so scattered a series of domains, that I am constantly providing what an Irishman loves so much, *i.e.*, an alibi. My laboratory is in two places; my lecture room in a third; my Museum in a fourth. Nevertheless, the lecture-room within the University is a great matter, and old students have returned, and new ones have come, till I have enrolled eighty-three as pupils—the biggest class I have had, and considering that it is not imperative, very creditable to all concerned.

"When the Friday came I could have gone to bed, but instead I had to travel to Glasgow in most inclement weather, and thereafter to drive five miles out, through darkness and rain. Next day I was up before breakfast, and at work from about six onwards in connexion with a patent-infringement, affecting a very kind friend.

"The result was a terrible cold, cough, etc., which blisters I hope are dispelling, but I lost last Saturday with election for Rector by the students, at which we all had to be present. What a row in the quadrangle! I could scarcely reach the Senatus Room, but fortunately had on my gown and cap (we have taken to square caps), and when the students saw that, they handed me through the shouting crowd, who were waiting to hear how the vote had gone, and seemed on both sides coming to *Nieves!*[1]

"All this is terribly egotistical. . . . . I hope to add a P.S. to-morrow.—Ever lovingly yours, GEORGE."

The severe cold under which he had laboured all that week did not cause special anxiety. Frequently in the years gone by

[1] The choice was between the Right Honourable W. E. Gladstone, M.P., and Lord *Neaves*.

had work been carried on with similar symptoms, and with eager anticipations of the rest attainable on the Saturday and Sunday; for one of the most touching features of his case was the good resulting from even a little ease. During this month of November his friends had been watching him with evident solicitude, kindly suggesting caution and care, then unattainable. It amused him much when Dr. John Brown proposed, as the best plan, "to put him under trustees," who should look after his health.

On the week in which the letter we have given was written, the days were counted off with longing for the Saturday, with its opportunities for care and nursing. It was with distress, therefore, that his sister learned his intention, in such a state of health, of giving his students a second lecture on the Friday. Seeing her about to remonstrate, he with *naïve* simplicity gave as a reason, the force of which must be evident to any sensible person, "They are not *up* in the Atomic theory."

The breakfast table was usually loaded with books of reference for the subject of the day's lecture, and notes in pencil were then written for it, in addition to those in use from year to year. So it was this Friday morning; and after breakfast he went into town with his wonted cheerfulness, desirous of obtaining information to go by that day's post to his brother in Canada, in the postscript to his letter. Afterwards it transpired that he had felt a stitch in his side that morning. It was a busy day in town. After the first lecture to his class, new pupils came to be enrolled, many visitors called, and he was compelled to converse much. Closing his Canadian letter, he says, "I have been at work all day." Not having ascertained all that was desirable, he promises to give the result of further inquiry by next post.

The second lecture was delivered with great difficulty, and with an apology to his students for sitting while addressing them.

On his return home, between four and five o'clock, his sister was startled by his appearance, why she could scarcely tell, but a nameless dread of impending danger fell heavily on her heart. This was not diminished by his saying, in a low and constrained voice, "I'll just creep up stairs." After sitting for half-an-hour

on a low chair in the drawing-room, with an air of great prostration, and not saying a word, he was with difficulty helped into bed. The pain in his side was treated as pleurodyne, from which he had frequently suffered, but next day his medical attendant, Dr. J. Matthews Duncan, being apprised of his illness, came, and announced that inflammation of the lungs and pleurisy were both present.

Now then had come the time to which he had so long looked forward. How did he meet it? Many talk lightly of death, as if to the Christian it has no terrors. Not so did he, and few have so often been on the verge of the grave and come back to speak of it. In 1847, he wrote to a friend in failing health:—"I am persuaded, from what I have experienced, that the world fills but a small space in the thoughts of one near to death. I believe, from what I have felt when brought very near to the grave, that the engrossing, devouring idea is, that of one's own individuality or personality,—and of God's personality. The prevailing feeling is that of the great Judge waiting for our soul as if there were no other soul in existence, and we, in our naked spirituality, without one relative, earthly friend, or well-wisher, about to pass away into the darkness, and stand before God. No transmutation which chemist or alchymist ever hoped for, or ever realized, has equalled, or can equal, the strangeness of that transformation which we shall undergo when we gasp out of this life into the next. Chemistry will not help us then. 'If there be knowledge, it shall vanish away.'" In 1848, a letter to Mr. Daniel Macmillan contains the following passage:—"I have been reading lately, with great sadness, the Memorials of Charles Lamb and the Life of Keats. There is something in the noble brotherly love of Charles to brighten, and hallow, and relieve the former; but Keats's deathbed is the blackness of midnight, unmitigated by one ray of light.

"God keep you and me from such a deathbed! We may have physical agonies as great to endure. It is the common lot. I feel that our heavenly Father can better choose for us than we can for ourselves, of what we should die; but I pray our blessed Lord and Master to be with us in our last fight with the last enemy, and to give us the victory. If He does, what

shall pain be but like other bitter medicines, the preparative for the unbroken health of an endless life?" And in 1857 he says:—"Often and often, as I have asked myself of what should I die, I have felt that, had I the choice offered me among physical deaths, I should not know how to choose, and would leave to God the appointment of the mode of dying, beseeching only to be spared maddening agony, and to be kept, above all, from losing faith in the blessed Saviour."

Those expressions of trust and hope are almost the only clue we have to his feelings during the few days of his illness, but they are sufficient. It had ever been his custom, in previous attacks, to carry on his daily work in bed as much as possible in the same way as usual. Books and writing materials surrounded him, and the day was divided into portions: so many hours for writing and study, so many for lighter reading, and so many for rest. Lively talk and fun made his sick-room a place of real enjoyment at most times, his ailments often being the subject of the jests. He disliked having any one to read to him, saying it set him to sleep.

Now all was different. Scarcely a word was uttered, and his weary look of utter prostration, being interpreted as a meek supplication not to be disturbed, as few were addressed to him. There *seemed* to be little pain, but no inquiry was made as to this. A distressing restlessness, and difficulty in coughing, were the most marked symptoms. It was touching to see the attempts to read to himself as formerly. A light newspaper was taken up at intervals throughout the first day of confinement to bed, but as often wearily laid down, with apparently no knowledge of its contents.

The only earthly care that appeared to disturb him was his class; and early on Monday morning the following note was written at his request to Professor Balfour, his sister kneeling with the paper on the bed, while with effort he slowly dictated:—

"My dear Balfour,—A sudden and unexpected attack of pleurisy, with accompanying inflammation of part of the lung, came on on Friday; and, as you may suppose, lays me aside

from lecturing, much to my distress, at the very beginning of the session.

"It would be a very great favour if you could lecture for me this week, beginning on Tuesday. My present topic is the Amylaceous group, including starch, gum, sugar, and cellulose, and falls quite in your way. My assistant will see that the carriage goes down every day to bring you up, with diagrams and specimens, and four assistants will be at your service every day. I trust you will be able to render me this service; but if you cannot, please inform the bearer, that I may make other arrangements."

Dr. Balfour kindly consented, and no further allusion was made to temporal affairs. Towards mid-day, on Monday, he requested a note to be addressed to Dr. Duncan, saying, that as there was no improvement, he thought it would be prudent to have another medical friend associated with him, naming Dr. Bennett as the one he should prefer. This done, he asked his sister to read to him, from the 'Athenæum' of the week, Captain M'Clintock's Narrative of his Voyage to the Arctic Seas. Towards evening there seemed tokens of Death's approach, and the medical men could only cherish fond hopes from the marvellous recoveries he had made before. His voice also was clear and strong, and this was a hopeful symptom. Stimulants were ordered to be given at short intervals during the night. On the first being brought, he looked at it with reluctance, but learning the doctors' wishes, he made an effort to take it, saying afterwards, "I did not think I could have swallowed it." The good effect of the draught soon appeared in the distressing cough being soothed to quietness. "The doctor was right," he remarked; and the next restorative was taken with readiness. The night passed peacefully, and at its close he said, with a gleam of his old cheerfulness, "I think I have turned over a new leaf." Hope once more animated his nurse's heart: she had seen him as ill before, and yet recover. The doctors confirmed this hope, saying, that if a few days were got over all might be well. So sanguine notes were addressed to several friends, Dr. Cairns amongst the number. But at mid-day the

peculiar and distressing restlessness returned. The senses were preternaturally acute, that especially of smelling, perfumes of any kind being unbearable. The only soothing offices were a continual change in the position of the pillows, and bathing face and hands with vinegar. His hands had been remarkable for a rare beauty in the rich carmine tinting the palms, and contrasting with the pure white skin. "Your hands seem on fire," had been said to him once; and much admiration had they elicited. Now it was observed while bathing them that the delicate palms and nails were black. To one so conversant as he with such symptoms, this was an unmistakable token, had there been any doubt before, that the pitcher was broken at the fountain, and the spirit summoned to return to Him who gave it. Still not till the second medical visit in the afternoon was hope quenched in others, and a telegraphic message sent to Dr. Cairns. George expressed desire to converse with Dr. Duncan, but said he could not from the difficulty in breathing.

In the afternoon he asked his sister to read the 'Athenæum' to him, saying, "You know I always read it from beginning to end:" while listening, occasional remarks showed that he clearly understood what he heard. He surprised her by saying abruptly, "The room will be darkened at nine; I wish to get to rest." She believed this implied being quiet for the night, and replied, with many wondering thoughts, "Very well."

Occasionally an inquiry was made as to the hour, with some reference to this "getting to rest." About six o'clock the 23d Psalm was read at his request, and then some detached verses,—

"When thou passest through the waters, I will be with thee; and through the rivers, they shall not overflow thee: when thou walkest through the fire, thou shalt not be burned; neither shall the flame kindle upon thee, for I am the Lord thy God, the Holy One of Israel thy Saviour."

"Fear thou not, for I am with thee: be not dismayed, for I am thy God: I will strengthen thee; yea, I will help thee; yea, I will uphold thee with the right hand of my righteousness."

"Let not your heart be troubled: ye believe in God, believe also in me.

"In my Father's house are many mansions: if it were not so, I would have told you. I go to prepare a place for you.

"And if I go and prepare a place for you, I will come again and receive you unto myself, that where I am there ye may be also."

"To him that overcometh will I give to eat of the hidden manna; and I will give him a white stone, and in the stone a new name written, which no man knoweth saving he that receiveth it."

"To him that overcometh will I grant to sit with me in my throne, even as I also overcame, and am set down with my Father in his throne."

"Read me something secular," he then said, "I don't wish to go to sleep yet." Possibly the excessive tremulousness of voice in reading such heart-stirring words, suggested this change; for no act of self-denial was too great for him. Standing near the gas, for the light was kept low, his sister spent the next three hours in continuous reading, picking out from various journals lying around, papers interesting but not exciting. One, it is remembered, was on Gems, another on the Scilly Isles, and occasional observations showed he was listening with perfect comprehension. His mother entering the room while he was alone, for a few minutes, saw him evidently engaged in prayer, and quietly withdrew.

Dr. Cairns arrived at nine o'clock, and went to him almost immediately. Though unaware that a summons had been sent, he showed no surprise at the presence of this dearly-loved friend. "I found him very low," Dr. Cairns says, "and to my eye—long familiar with death—it was only too visible in his face. He was quite conscious, though he could speak but little. He asked me to pray, which I did, and he fervently assented, saying, 'I am in the hands of a good and kind Redeemer; I rejoice in that every way;' and in answer to my query whether he had peace, replied 'Yes,' with his usual sweet smile, sweeter than ever on the pallid face of death. On leaving the room, he said, 'Come as often and stay as long as you please.'"

His kind friend Dr. Duncan once more visited him, and when he left, the oft-expressed wish for "rest" was repeated. Dr.

Cairns returned for a few minutes: to the inquiry made once again, "Is all peace?" came the same reply "Yes," with a smile. This question elicited the only smiles that had been seen in those days of weakness. "Shall I pray with you?" "Yes, but short," evidently feeling the moments numbered. His uncle coming in, they shook hands and parted, he saying, "Don't vex yourself about me; you've been very kind to me." His mother then came and kissed his hand; he in reply (knowing she could not hear his voice) raised his right arm, pointing significantly heavenwards. Each one was calm outwardly, the utmost self-control being exerted, that he might not be distressed by witnessing emotion on their part. A love of quiet, and avoidance of anything like bustle were ever strongly characteristic of him, and now this was borne in mind. He was therefore left alone with his sister, the light being lowered as much as possible: she bathed once more his face and hands; it was evidently soothing, and he said, "How can I ever thank you for all your care and kindness?" For the first time she then expressed her consciousness of his state, by saying, "You're going home, dear." With distinctness he uttered the words, "I've been an unworthy servant of a worthy and gracious Master," then the voice broke, and only one word more could be distinguished, "sin." Two portions of Scripture were repeated with the hope of pointing from sin to the sin-Bearer, "If any man sin, we have an advocate with the Father, Jesus Christ the righteous." "Ye are complete in Him." A very marked change appearing in his countenance, a bell at hand was rung, which brought his mother and John Cairns again beside him. "He was breathing rapidly and with difficulty, and his end was near.[1] I shortly prayed again, and a slight elevation of the eyes showed that he recognised me. Your mother, Jessie, and I watched him intently as the breathing became more laborious and slow, and the eyes nearly closed. At length a slight convulsive effort announced almost the last struggle; but his breathing was, after a pause, resumed, and the actual falling asleep was so gentle that it could not be distinguished. His features retained the most peaceful expression,"

[1] We quote from a letter written by Dr. Cairns, an hour later, to the absent sister Jeanie.

and thus at eleven P.M. was his wish fulfilled, and he entered into the *rest* for which he had so longed. Kneeling around the bed, a thanksgiving was offered, that for him the Saviour's prayer was answered, "Father, I will that they also, whom thou hast given me, be with me where I am;" and then the pent-up agony broke forth, for to each had this beloved one been dearer than life.

Many years before had such a time been pictured to his mind as follows :—

THE CHRISTIAN SOLDIER PUTTING OFF HIS ARMOUR AT THE GATES OF HADES.

EPH. vi. 13-17.

A SONG OF THE NIGHT DURING SICKNESS.

Helmet of the hope of rest!
Helmet of salvation!
Nobly has thy towering crest
Pointed to this exaltation.
Yet I will not thee resume,
Helmet of the nodding plume;
Where I go no foeman fighteth,
Sword or other weapon smiteth;
All content, I lay thee down,
I shall gird my brows with an immortal crown.

Sword at my side! Sword of the Spirit!
Word of God! Thou goodly blade!
Often have I tried thy merit;
Never hast thou me betrayed.
Yet I will no further use thee,
Here for ever I unloose thee;
Branch of peaceful palm shall be
Sword sufficient now for me;
"Fought the fight, the victory won,"
Rest thou here, thy work is done.

Shield of faith! my trembling heart
Well thy battered front has guarded;
Many a fierce and fiery dart
From my bosom thou hast warded.
But I shall no longer need thee,
Never more will hold or heed thee.
Fare-thee-well! the foe's defeated,
Of his wished-for victim cheated;
In the realms of peace and light
Faith shall be exchanged for sight.

Girdle of the truth of God!
  Breastplate of His righteousness!
By the Lord Himself bestowed
  On his faithful witnesses,
Never have I dared unclasp thee,
Lest the subtle foe should grasp me;
Now I may at length unbind ye,
Leave you here at rest behind me;
Nought shall harm my soul equipped
In a robe in Christ's blood dipped.

Sandals of the preparation
  Of the news of peace!
There must now be separation,
  Here your uses cease.
Gladly shall my naked feet
Go my blessed Lord to meet;
I shall wander at his side
Where the living waters glide;
And these feet shall need no guard
On the unbroken heavenly sward.

Here I stand of all unclothèd,
  Waiting to be clothed upon
By the Church's great Betrothèd,
  By the Everlasting One.
Hark! He turns the admitting key,
Smiles in love, and welcomes me;
Glorious forms of angels bright
Clothe me in the raiment white,
Whilst their sweet-toned voices say,
"For the rest, wait thou till the Judgment Day."

CHAPTER XII.

VALE!

"Thanks be unto God, who giveth us the victory!"

"Wrong not the dead with tears!
Think not the spirit fears
To cast away its earthly bonds of clay,
To rise from death to everlasting day!
Wrong not the dead with tears!
A glorious bright to-morrow
Endeth a weary life of pain and sorrow."

WYKE BAYLISS.

THE tidings of George Wilson's death spread next day with mournful speed. As often happens, his long struggle with disease had led to the hope that again he would triumph over it. "We had begun to fancy that he possessed, not a charmed, but a blessed life, which was to be prolonged for further usefulness." The illness, also, had been of such short duration that many knew not of it. A gentleman, who had written to him a few days before, and received no reply, went on the morning after his death to the University, unaware of the state of things, to make inquiry about him, and addressed to the first student he met, the question, whether he knew if Professor Wilson would be at the College that day. The sole reply was a burst of tears.

Professor Balfour met the class, according to previous arrangement, not to speak of "gum or starch," but of the marvellous transition from the earthly tabernacle to the heavenly home of their much-loved teacher. A student, in reply, expressed the dismay with which the tidings had been heard, and the grief with which they could not but regard the mementoes around —class specimens and diagrams—without hope of again hearing the voice that had expounded them. "Even in classes never personally connected with him, the students showed their sense

of the common calamity, by the hushed attention, and even reverence with which they received every allusion to his memory."

For two days a deep gloom settled on the city, not on any one class in particular, for rich and poor, learned and unlearned, seemed equally affected. The experience of one seemed that of all: "Though not much in the habit of meeting with Professor Wilson, he felt almost as if suffering from a family bereavement."[1] In the Chamber of Commerce a touching allusion was made by its Chairman,[2] before reading a report on the Industrial Museum: "The Technological Chair promised to be one of the most popular in the University; and by none, next to his own relatives and personal friends, will his loss be so much deplored as by those who were more immediately connected with him in his class, the laboratory, and the Museum, even to their most humble dependants, who worked as much from love as duty. Who, indeed, would not have worked for Dr. Wilson? Though not a stone had been laid of the building which was to be the Industrial Museum of Scotland, it had obtained a name that reached to distant lands, from which gifts were continually flowing in to assist the Museum, established with so much diligence and success." A lecture to this body had been promised by Professor Wilson in the December following, the subject having reference to the combination of masters and workmen in industrial pursuits.

An instance of the love of dependants was strikingly afforded in the case of a workman whom he had for many years employed occasionally, and with whom, as was his wont, many a kindly word and jest had passed. This man, now old and feeble, was lying ill at the same time as his friend, and, knowing the strength of his love, the relatives around tried to keep him in ignorance of Dr. Wilson's death. The attempt was vain. It was the one subject on every lip, and learning it from a visitor, he sank from that moment, unable to bear the shock.

Some few were able to forget themselves in his joy, as when one lady said, on hearing of his dismissal, "How glad I am!" so intensely realizing the blessedness of the change to

[1] Mr. Charles Cowan, at a meeting of the Merchant Company, Nov. 25.
[2] Mr. R. M. Smith.

him, as to rest in that for the time. But the greater number could only try to hush their grief to submission; and his words on John Reid came unbidden to remembrance, as if giving the most fit expression to their mingled feelings:—

"Thou wert a daily lesson
Of courage, hope, and faith;
We wondered at thee living,
We envy thee thy death.

"Thou wert so meek and reverent,
So resolute of will,
So bold to bear the uttermost,
And yet so calm and still.

* * * *

"Well may we cease to sorrow:
Or if we weep at all,
Not for thy fate, but for our own,
Our bitter tears should fall.

"'Twere better still to follow on
The path that thou hast trod,
The path thy Saviour trod before,
That led thee up to God."

The direction of the wind, so often keenly watched on his account, seemed unimportant *now*, for, as he had anticipated years before, in speaking of the effects of cold spring weather, "the air of heaven will put all to rights. It never blows there from the east."

Two of his fellow-professors wrote as follows on the first impulse of sorrow:—"The intelligence of the death of my beloved colleague, your son, has quite unnerved me. Of the loss which Scotland has sustained others will speak; suffice it for me to state, that I have lost a friend, the brightness of whose genius was only equalled by the warmth of his heart. When lying far away, wounded and low, his ready sympathy and aid cheered me; and it is sad to think that I shall not be able to return his kindness in this world. But he did it as a Christian, as he did his every act, and he shall in nowise lose his reward. Think of him as entered into his rest, where his bright spirit basks in the full sunshine of that presence which made it shine. May He comfort you and teach you to acknowledge the words which

your son addressed to me in this room just a week ago, 'It is good for me that I have been afflicted.'"[1]

Another[2] says, "You cannot wish George Wilson back in this world. His soul was well fitted for a better; whilst his body was not fitted to remain in this world without much continued suffering, borne so unrepiningly for the sake of those he loved.

"His memory will always remain with us tenderly cherished. His elegant and graceful mind, his genial and happy spirit, made him many friends, but never a single enemy."

At the next meeting of the Philosophical Institution, before the lecture began, Mr. Smith, the Vice-President, alluded with tenderness to the loss they had sustained: "We can all remember—alas! it is now only in memory that we can recall the pleasure—how often he has charmed as well as instructed us here; how often, in his prelections from this desk, the clear, scientific exposition has been enlivened and adorned by his graceful play of fancy. . . . At the risk of intruding within the domain sacred to private friendship, I would venture to say, that a gentler, nobler, more true-hearted man we have not left among us."

Looking back on the last few weeks of his life, those more intimate with him began to recall daily visits paid, in that too busy month of November, to a literary Christian friend near death. Though much enfeebled, and with work pressing on him, yet day by day did George Wilson read and pray by his bed, soothing his fears at the approach of the last enemy, and sharing his joyful anticipations of the employments of heaven. Physically he suffered from the exertion of those visits, but they afforded him great delight, and were doubtless an aid to himself in passing through the same dark valley so soon after.

To the public mind it seemed that the closing words in an article in the November number of 'Macmillan's Magazine,' on 'Paper, Pen, and Ink,' were a farewell legacy. It will be re-

[1] From Professor Kelland.

[2] Professor Playfair. To several of the Professors, especially to Professors Playfair and Balfour, much gratitude is due for their kindness in making arrangements in reference to the Technological Class.

membered that it had originally been delivered as a lecture in the Session of 1857-58, but now appearing as almost his last published words, the close had a new and striking significance. "When Paper, Pen, and Ink," he says, "have made the tour of the world, and have carried everywhere the acknowledgment of brotherhood between people and people, and man and man, and the Song of Bethlehem, fulfilled to the full, has enlightened every intellect and softened every heart, their great mission will be ended. And let us not complain that our writing materials are one and all so frail and perishable, for God himself has been content to write His will on the frailest things. Even His choicest graphic media are temporal and perishable. The stars of heaven are in our eyes the emblems of eternity, and they are the letters in God's alphabet of the universe, and we have counted them everlasting. Great astronomers of old have told us that the sidereal system could not stop, but must for ever go on printing in light its cyclical records of the firmament. But in our own day, and amongst ourselves, has arisen a philosopher[1] to show us, as a result simply of physical forces working as we observe them do, that the lettered firmament of heaven will one day see all its scattered stars fall, like the ruined type-setting of a printer, into one mingled mass. Already the most distant stars, like the outermost sentinels of a flock of birds, have heard the signal of sunset and return, and have begun to gather closer together, and turn their faces homewards. Millions of years must elapse before that home is reached, and the end comes, but that end is sure. God alone is eternal, and they who through His gift are partakers of his immortality.

"It is wonderful to find a patient, mechanical philosopher, looking only to what his mathematics can educe from the phenomena of physical science, using words which, without exaggeration, are exactly equivalent to these :—'Thou, Lord, in the beginning hast laid the foundation of the earth, and the heavens are the works of Thy hands; they shall perish, but Thou remainest, and they all shall wax old as doth a garment, and as a vesture shalt Thou fold them up, and they shall be changed; but Thou art the same, and Thy years shall not fail!'"

[1] Professor William Thomson of Glasgow.

"If God's Paper, Pen, and Ink are thus perishable, shall we complain that ours do not endure? *It is the writer that shall be immortal, not the writing.*"

These last words, as Dr. Cairns has remarked, "are now the best consolation to the wide circle who lament his sudden departure and unaccomplished aims, and the strongest incentive to pursue and aspire after the same Christian immortality."

In a graceful tribute to his worth, offered by Professor Kelland, in addressing the pupils of the classes of mathematics, at the close of the Session, the words are compared to the last expression of Baron Cauchy, a celebrated mathematician. "When requested to give repose to his mind, and thus to second the efforts of those who were praying for him, he replied, 'Men pass away, but their work remains—pray for the work.' The one declared that man alone is immortal, his works perish; the other, that man passes away, but his work remains. But yet, are they not the same? Like the rays which issue from a cloud that obscures the setting sun, they seem to diverge, this to the right hand, that to the left, but they are in reality essentially parallel."

Biographical notices appeared in many of the periodicals of the day. From one by his friend, Dr. John Brown, we have made extracts occasionally. In a French Review, L'Abbé Moigno says, "Sa mort à un âge si peu avancé (quarante et un ans) est presque un malheur national."[1] From America there soon rebounded similar testimonies: "The University of Edinburgh has lately suffered severely by the death of one of its most distinguished teachers. The department of science has been specially unfortunate. Since the death of the venerable Jameson, Professor Forbes, whose fine genius and extensive erudition gave promise of an illustrious life, has been laid in the sepulchre of his fathers; and ere yet his country, and we may say the world of science, has ceased to mourn for this most gifted of her children, another equally honourable and beloved has been laid in the dust. The name of Professor George Wilson, whose recent appointment as Regius Director of the Industrial Museum of Scotland, and to the Professorship of Technology in the University of Edinburgh, was hailed with so

[1] 'Cosmos,' le 6 Janvier 1860.

readiness for the future building, can alone appreciate the care and thought which must have guided him in the selection and arrangement of such varied materials. Most wonderful and refreshing too was it to behold the enthusiasm with which he bore his feeble body over a manufactory, peeping into every process, collecting samples, and gathering the workmen around him, who always seemed delighted to tell him all they knew, or to listen to his kind and instructive remarks. His technological course, too, was largely attended, and in his inaugural lecture for 1855[1] he explained the nature of Technology as the science of the utilitarian arts, and expressed his intention of at once giving a systematic course, "so that the Museum will minister to the Chair, not the Chair wait upon the Museum." The plan of the course is thus described in a recent article in the 'North British Review,' quoting from his class syllabus:—

"The course was divided into mineral, vegetable, and animal technology. Under the first were included the relation of the atmosphere, the ocean and tributary waters, and the earth, to Technology; and among special subjects, fuel, building material, glass and glass-making, pottery, earthenware, stoneware, and porcelain; metallotechny, electrotechny, and magnetotechny. Under the second, or vegetable technology, were considered saccharo-amylaceous substances, sugar-making, albuminous substances, and fermentation, distillation, wood and wood fibres, textile tissues, bleaching, dyeing, calico-printing, paper-making, scriptorial or graphic industrial arts, caoutchouc, gutta-percha, and the resins, fats, and oils. Under the third section, or animal technology, were included the mechanical application and chemical products of bones, ivory, horns, hoofs, tortoiseshell, shells, and corals; skins, tanning, fish-scales, hair, fur, wool, bristles, quills, and feathers, animal refuse."

The introductory prelection of the following year was on the physical sciences which form the basis of Technology;[2] and for 1858 and 1859 he chose the progress of the telegraph.[3] He

[1] 'What is Technology?' Sutherland & Knox.
[2] Printed in the 'Edinburgh New Philosophical Journal.' January 1857.
[3] Published as a separate treatise by Macmillan & Co.

respect and love offered at the grave of any of our citizens."[1] On through Princes Street it came, every balcony and window filled with gazers, dim-eyed and heavy-hearted, till at the Royal Institution, Mound, the climax was reached, by the public bodies there awaiting its arrival joining in, and the crowd upwards to George Street forming one dense mass of onlookers. The arrangement then made was that first in order were the members of Dr Alexander's congregation; after them the University students, those of the Technological class keeping together; the Pharmaceutical Society; the Royal Scottish Society of Arts; the Chamber of Commerce; the Philosophical Institution; the Merchant Company; the Senatus Academicus in their gowns; the Lord Provost and Magistrates in their scarlet robes; then came the hearse, and—following it—his empty carriage, familiar to Edinburgh eyes, and associated with pleasant thoughts now turned to sadness. Private carriages and the general public brought up the rear, the whole number being not fewer than a thousand.

While all move slowly on, four abreast, through the picturesque portion of Princes Street yet to be traversed, and while the crowd thickens on every point of eminence, let us proceed to the Old Calton burial-ground and await its arrival. What is now a level road, Waterloo Place, once looked down on a valley, with a cemetery and the Calton Hill beyond it. In 1815 a bridge was made to span the gulf, while the road was carried (painful necessity) though the cemetery, of which a portion now lies on each side of the road. That to the right side is the larger and more interesting; and it is with it we have to do.[2]

The gates to-day are strictly guarded, and no one has been admitted. As the procession approaches, the niches in the screen wall—separating on each side the road from the cemeteries—are filled with High School boys who, on their way home, scramble up to see the marvellous homage to one who sat in the halls where they meet for lessons, and played where they play, when he too was a little boy. It seems strange that the meek yet noble face beneath that coffin-lid should be the

[1] 'Funeral Sermon' by Dr. Alexander, p. 25. A. & C. Black, Edinburgh.
[2] Appendix B.

centre of all this stir. We can only understand it by listening to these words: "Them that honour me, I will honour." Now that they have come close to the gate, the procession is inverted, those in front falling back and lining the road, while the hearse passes up the centre, and the relatives immediately follow. During the short period spent within the walls, the overpowering grief of the mourners passes beyond bounds. But this last putting to sleep does not take long, and he soon lies with his twin-brother and the many dearly-loved ones there before him. "The heavens waited just till they covered him in, and then wept a quick cold shower, which cleared off, and the new moon lighted up the west." The private mourners left the burial-ground while the remainder of the procession was still passing in. "The grave is the great laboratory, whence alone the incorruptible, glorious, powerful, spiritual product of the Resurrection can emerge. Death is the gate of life. Let us see those we love borne through it without dismay, since they go in the train of Christ, and come forth from the temporary shade in the brightness and splendour of their Divine leader."[1]

To the relatives in distant lands those tokens of love came with soothing power. Speaking of the multitude who thus gave unmistakable evidence of affection, his cousin in Australia writes: "God bless all their warm hearts!" And his brother Daniel says: "It is not a light thing now to remember that one whose years of public life have been so few, and even these encroached on by the ever-increasing impediments of failing health, has been laid in his grave amid demonstrations of public sorrow such as have rarely indeed been accorded, in that native city of his, to Edinburgh's greatest men."[2] "There was something rare and touching in the homage with which Edinburgh —the least demonstrative of cities—followed him to the grave."[3]

Over his resting-place there has been raised, by his uncle, an antique cross, harmonizing with that he suggested for his cousin James Russell. The two stand side by side, alike but different. It is twelve feet in height, and bears the inscription:

[1] From unpublished Sermon on 1st Corinthians xv., by the Rev. Dr. Cairns.
[2] 'Canadian Journal,' March 1860.
[3] 'Macmillan's Magazine,' January 1860.

IN MEMORY OF

GEORGE WILSON, M.D.

PROFESSOR OF TECHNOLOGY IN THE UNIVERSITY OF EDINBURGH,

AND

DIRECTOR OF THE INDUSTRIAL MUSEUM OF SCOTLAND.

BORN FEBRUARY 21, 1818.

DIED NOVEMBER 22, 1859.

THEM THAT HONOUR ME I WILL HONOUR.

At its base is the emblem of his "dear museum," as expressed in more than one printed lecture. "When that Museum shall be erected, I will ask its architect to sculpture on its front an emblematical device, namely, a circle, to imply that the Museum represents the industry of the whole world; within the circle, an equilateral triangle, the respective sides of which shall denote the mineral, vegetable, and animal kingdoms, from which industrial art gathers its materials; within the triangle an open hand, as the symbol of the transforming forces which change those materials; and in the palm of that hand an eye, selecting the materials which shall be transformed."[1]

"I hope"—he said of the museum to a young lady in 1856—"it is to become a great and famous institution, and that, unnumbered years hence, when the daisies have covered me for many a season, and you are a venerable lady with white hair, you will walk with some grandchild, as gentle and kindly as yourself, around its well-filled halls, and show her all the wonders of the museum." The daisies do cover him now; and in spring, snowdrops, symbolical alike of him and of the glorious resurrection to come, arise, and mutely minister comforting thoughts to the visitors of that quiet retreat, where, though in

[1] 'On the Industrial Museum of Scotland in its Relation to Commercial Enterprise.' A Lecture delivered to the Merchant Company of Edinburgh, and printed for private circulation.

readiness for the future building, can alone appreciate the care and thought which must have guided him in the selection and arrangement of such varied materials. Most wonderful and refreshing too was it to behold the enthusiasm with which he bore his feeble body over a manufactory, peeping into every process, collecting samples, and gathering the workmen around him, who always seemed delighted to tell him all they knew, or to listen to his kind and instructive remarks. His technological course, too, was largely attended, and in his inaugural lecture for 1855[1] he explained the nature of Technology as the science of the utilitarian arts, and expressed his intention of at once giving a systematic course, "so that the Museum will minister to the Chair, not the Chair wait upon the Museum." The plan of the course is thus described in a recent article in the 'North British Review,' quoting from his class syllabus:—

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The introductory prelection of the following year was on the physical sciences which form the basis of Technology;[2] and for 1858 and 1859 he chose the progress of the telegraph.[3] He

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[3] Published as a separate treatise by Macmillan & Co.

Wilson's life, listened to with eager interest, and towards its close swaying the audience irrepressibly, till even young men and old bowed their heads and wept without restraint. The secret of his great attractiveness was dwelt on before concluding, and estimated as due not merely to his genius and talents, his reputation as an author, or his popularity as a lecturer. He had, it is true, "addressed himself to so many different classes in the community, and he had invariably so gratified, instructed, and captivated his audience, that there was a very large number of persons lying, as it were, under personal obligations to him, and whose feelings toward him were consequently greatly beyond those which mere admiration of talents or of authorship could inspire. Added to this was the affection which his unfailing gentleness, his brave resolution to work, notwithstanding manifest bodily infirmity and fluctuating health, and his promptitude to meet the wishes of the public, at whatever sacrifice of time, energy, and personal convenience, could not fail to excite. As in private, so in public life, there was something about him which inspired love. People came to feel as if they would like to do something kind to him, even when they were not personally acquainted with him. No wonder, then, that a feeling of this sort, which had been gradually accumulating for years in the hearts of the community, should have burst forth in such a demonstration as that of which our city was the scene when an opportunity of showing respect to him, which was felt to be the last, was presented.

"But I believe that that which chiefly moved the multitude to do him homage was the sense of how true and good a man he was. It was his religion, so simple, so sincere, so unobtrusive, yet so constantly operative, that stamped upon his character its highest worth; and it was this, I believe, which drew to him the confidence, the respect, and the love of the community more than anything else. Men felt that in him there stood before them one of the finest combinations of genuine science and genuine Christianity that had ever been presented to their view. For with him religion and science were not two things—they were one; so interwoven with each other, that every contribution

which he made to science was also laid as an offering on the altar of religion. He did not, as is too common with men of science, content himself with merely making his obeisance to religion, and then passing by on the other side to prosecute an independent course. Religion went with him all along his path, and it was on her head he sought to place the crown that science had enabled him to win. It was his daily endeavour to make all his work bear on the glory of his God and Saviour, to turn all into a solemn liturgy that should rise up as incense before God. And in this he so succeeded, that his whole soul came to be pervaded with Christian influences; and religious thoughts and feelings flowed unbidden, and with the most perfect naturalness, into all his discourses and writings."[1]

Another friend[2] has endeavoured to account for the intensity of the mourning: "The stroke was felt in a very peculiar manner by the community of Edinburgh, to whom Dr. Wilson was endeared by special ties. He had grown up and attained to distinction among them, had always been looked upon by them as one of themselves, and his rising reputation and influence were regarded by his fellow-citizens with a just pride and satisfaction. He had interested himself actively in whatever tended to their instruction or improvement, yet always in such a way as to disarm the hostility of contending parties, and to place high above suspicion his own spotless integrity, his comprehensive sympathies, and his extraordinary firmness and candour. His voice had been ever ready to instruct or delight his townsmen. His personal character, too, had been felt to be an invaluable power for good among them, and good of the highest kind; for it was scarcely possible to avoid receiving an enhanced impression of the reality and beauty of genuine religion, when it was seen embodied in a living character of such piety and buoyant energy, such lofty aspiration combined with true humility, such generosity, and delicacy, and tenderness, with unbending truth and integrity of principle,—in short, such a general grace and loveliness, united with such masculine deter-

[1] 'Funeral Sermon,' by W. L. Alexander, D.D., pp. 26-28. A. and C. Black, Edinburgh.

[2] Professor MacDougall.

mination, activity, and force. It was a community thus fondly affectioned towards him that were suddenly startled and horrified by the intelligence of his death."

All this is beautifully expressive of the truth; but probably no endeavour to analyse the constituents of that influence over others which George Wilson exercised, consciously and unconsciously, can be more than partially successful. In looking at a flower or a bird, we can scarcely tell from what it is we receive delight: form, colour, odour, and grace of motion, all conspire to please, and it is not necessary to know why we are pleased. If it be so with a simple organism, how much more difficult is it to solve the problem with a being whose higher nature communes with us through media in themselves so attractive, that we can only bask in the sunshine of its radiance with unquestioning joy? Worth of character is often unattractive in itself, but united to genius it is well-nigh irresistible. Let us not on this account, however—if unable to lay claim to this rarer charm—put aside the lessons taught us by George Wilson's life, but rather let us look on him as one who, like St. Paul, obtained mercy, for a pattern to them who should hereafter believe to life everlasting.

When great lights are removed from this dark world, does it not become those less brilliant to seek to shed their rays over a larger surface, that the gloom may be somewhat diminished, and the bright shining of the true Light everywhere hastened? "Allow not the unobtrusive meekness you have witnessed, the steady truth, the upright integrity, the unostentatious self-denial, the patient sweetness, the hopeful resignation of the loved and lost to die away in your temporary admiration of them; but let them fall into your hearts like living seeds, there to be cherished as precious things, which are in due season to bear fruit after their kinds in your own life and experience, —fruit which shall be the strength and comfort of those who come after you, and your testimony to the faithfulness of your God."[1]

[1] 'The Ascension of our Lord:' a Sermon by R. P. Graves, M.A, p. 11. Hamilton, Adams, and Co., London.

We attempt no further estimate of his life or character. He himself has narrated the facts, from which each may draw his own conclusions. Where these fail to influence, further words would be of little avail. And so farewell, dear reader: may we meet him in the temple of our God, to go no more out for ever!

APPENDIX.

APPENDIX.

A.

ESTIMATE BY DR. J. H. GLADSTONE.

In endeavouring to form an estimate of Dr. George Wilson as a scientific man, it is necessary to remember that he passed through the ordinary curriculum of a medical student, then devoted himself more especially to chemistry and the allied natural sciences, and afterwards had his attention particularly directed to the useful arts as Professor of Technology. It should be also borne in mind that he was a literary as well as a scientific man, and that he spent a large portion of his time as a public teacher. I shall therefore, for the sake of convenience and greater clearness, regard him from four different points of view,—as an original investigator; as a technologist; as a scientific historian or biographer; and as a teacher or expounder.

AS AN ORIGINAL INVESTIGATOR.

Though it is not as an investigator that Dr. Wilson acquired his principal fame, yet his researches were by no means few in number or limited in range. He added to our store of knowledge in chemistry, in physiology, and in natural philosophy; but not so much by actual discoveries as by elucidating points that were previously involved in obscurity. While some of his fellow-inquirers followed up any hint that Nature might give, and formed their crude theories, he was generally content to expound and illustrate their views, and to devise, if possible, some crucial experiment that would decide between rival hypotheses. And if the inquiry bore in any way on the welfare of his fellow-men, he felt it to possess a greater claim on his attention. As he published much, with little leisure for quiet research, he also frequently suggested thoughts and processes

which others have pursued to a successful issue. Thus he had great influence on the science of the day, though he never added to the list of chemical compounds, which is now growing to such portentous dimensions, or made any anatomical discoveries.

His first investigation was his boldest, and that farthest removed from ordinary human interest. In chemistry there has long been a notable question,—What becomes of a Haloid salt in solution; or, to take a particular instance, when common salt dissolves in water, does it remain chloride of sodium, or does it become hydrochlorate of soda? Dr. Wilson, when a student, thought he had solved this riddle. He communicated his discovery to the British Association, and published his 'Experimental Demonstration of the Existence of Haloid Salts in Solution,'[1] resting mainly on the fact that hydrobromic acid dissolved in water with terchloride of gold produces the scarlet bromide of that metal. The argument in the then state of chemical knowledge was perhaps unanswerable; but, from frequent communications with him on the subject in later years, I know that he altered his opinion of its conclusiveness. He brought the matter again before the British Association in 1855, with further experiments, and in the meantime he had published a paper on "The Argument for the Binary Theory of Salts, derived from the non-action of the anhydrous oxygen acids on organic colours."[2]

In the early part of Dr. Wilson's career, his fellow-student

[1] This is to be found in the 'Edinburgh Academic Annual' for 1839. It formed part of one of the Inaugural Dissertations, selected by the Faculty of Medicine to compete for their annual gold medal at the public graduation, August 1, 1839.

[2] 'Quarterly Journal of the Chemical Society,' vol. i. p. 332. In a letter to Dr. Gladstone in May 1855, Dr. Wilson speaks of this inquiry while referring to a paper of Dr. Gladstone's, 'On Circumstances Modifying the Action of Chemical Affinity.' (See Phil. Trans. for 1855.) "As for the Salt question, remember that my paper was written so far back as 1837, when I was a student, and that the Berthollet doctrines of affinity, although pleaded for by Professor Graham, were not appreciated as your papers will now lead them to be. Graham himself volunteered his adhesion to my views at the British Association meeting of 1839, so little did he think of questioning them by such reasonings as yours. I did not purpose to call in question the general justness of your conclusions. On the other hand, I fully admit and admire them, and freely acknowledge that my inferences must be modified in the light of your views, which are far beyond and above Berthollet's in many respects. At the same time, I think my conclusions substantially unaffected, and that your recognition of what our older chemists called 'Elective Affinity' occurring according to the law of equivalents, leaves me all I demand."—J. A. W.

and friend, the late Dr. Samuel Brown, propounded his ingenious Atomic Theory, and believed he had found an experimental support for his views in the conversion of carbon into silicon. This alleged transmutation of elements created a great sensation in the scientific world, especially as the then vacant chair of chemistry at Edinburgh was claimed by his friends for Dr. Brown, as an appropriate reward for his dissertations and discoveries. But the reputed facts were denied; and Dr. Wilson undertook to sift the matter to the bottom. He spent the winter of 1843-44 in repeating the experiments in conjunction with Mr. John Crombie Brown, and they printed together an account of them;[1] and Dr. Wilson published a paper on isomeric transmutation,[2] in which the whole question was very calmly discussed, the difficulty presented by the atomic weights fairly set forth, and the statement made that the experiments were insufficient to prove the important deduction which had been drawn from them.

During the previous year, a discussion had arisen in the Zoological Society of London, about the bones of that gigantic fossil bird, the dinornis. Those bones, and those of many other extinct creatures, were found to contain an enormous amount of fluoride of calcium, instead of the doubtful trace which had been detected in recent bones. The theory had been started by Dr. Falconer, that this fluoride might have come from a transmutation of the ordinary phosphate of lime, while the more orthodox opinion was maintained by Mr. Middleton, that the fluoride had been somehow dissolved and deposited in the bones while buried in the earth. Here was just a question after Dr. Wilson's own heart, especially as it glanced at the bewitching idea of transmutation. He entered on the subject, and during several years produced a series of papers, the titles of which are given below,[3]

[1] 'Trans. R. S. E.,' vol. xv. part iv.

[2] 'Edin. New Phil. Journal,' July 1844.

[3] On the Solubility of Fluoride of Calcium in Water, and its relation to the occurrence of Fluorine in Minerals, and in recent and fossil Plants and Animals.—'Trans. R. S. E.,' vol. xvi. part ii.

On the Presence of Fluorine in Blood and Milk, &c.—'Edin. New Phil. Journal,' October 1850.

On the Presence of Fluorine in Ocean Waters.—'Edin. New Phil. Journal,' April 1850.

On Two New Processes for the Detection of Fluorine when accompanied by Silica,

in which he showed the presence of fluoride of calcium, not only in the bones and teeth, but in the blood, milk, and other secretions of recent animals; then he traced it back to the vegetable world, finding it in the stems of many of those plants which the mammalia use for food. Attacking the question, How does the plant derive its supply of this element? he found the fluoride of calcium soluble to a slight extent even in pure water, and occurring not merely in the mineral fluor spar itself, but also in small quantities in granite, porphyry, and many other rocks. He found it to be dissolved by the springs, and thus what is not absorbed by the plants feeding on the soil makes its way into the rivers, and ultimately into the sea, among the salts of which fluorine was discovered to be an ordinary constituent. Dr. Wilson was led to the conclusion that the fluoride found in some of these big bones of ancient times had filtered into them, forming a very insoluble compound with the phosphate of lime.

Dr. Wilson's researches on Colour-Blindness appear to me the most complete of his investigations, and those with which his name will be most inseparably associated. In November 1853 he commenced a series of papers in the 'Edinburgh Monthly Journal of Medical Science' on Colour-Blindness, or Chromatopseudopsis, as he termed it. During this investigation, he not merely brought together the substance of everything that had been previously written on the subject, but he collected accounts of all the colour-blind whom he could induce to describe their peculiarities faithfully in writing, or to let him examine them. There were tailors who matched a scarlet waistcoat with green strings; clerks who signed their names in red instead of black ink; physicians who never saw the tint of their patients' complexions; and laboratory students who were never sure of the

and on the presence of Fluorine in Granite, Trap, and other Igneous Rocks, and in the Ashes of recent and fossil Plants.—'Trans. R. S. E.,' vol. xx. part iii.

On the Extent to which Fluoride of Calcium is Soluble in Water at 60° F.—'Trans. Brit. Assoc.' 1847, p. 61.

On the Presence of Fluorine in the Stems of Gramineæ, Equisitaceæ, and other Plants, with Observations on the Sources from which Vegetables derive this element. —'Bot. Soc. Edin.' 1852.

On M. J. Nicklé's Claim to be the Discoverer of Fluorine in the Blood.—'Phil. Mag.' March 1857.

colour of a precipitate. He examined the sight of his brother professors and of his pupils, and had drawn up before him the police, and the attendants at a lunatic asylum, and whole companies of soldiers, infantry, artillery, and hussars. Thus he was able to determine, with some accuracy, the proportion of the colour-blind,—about two per cent. being found defective as Dalton was, that is, mistaking greens, reds, and browns, and sometimes calling red black; while about five per cent. were found subject to this peculiarity in a minor degree. Dr. Wilson's mode of experimenting was usually with coloured diagrams and Berlin wools, but he also employed the prismatic spectrum itself. Thus he was able to show the small perception of red, which is the principal symptom of colour-blindness; and that many of the most curious mistakes, such, for instance, as confounding light red purple with dark blue, arise from the red rays being scarcely luminous to such patients. I believe he was the first to point out that there is often a shortsightedness in regard to colour when there is none in respect to form; and that to many patients red is more visible by artificial light, so that, while unable to distinguish by their colour the red flowers from the green leaves of the geranium by day, they enjoy the chromatic contrast as they walk through the conservatory by gas-light. On this fact Dr. Wilson founded the most practical suggestion for the alleviation of this defect, namely, the substitution of artificial light for day-light in the examination of colours, and the employment, for a similar purpose, of glasses coloured slightly orange or yellow. He was not content with ascertaining the symptoms, but desired also to discover the cause of colour-blindness; hence he was led to examine the theories which had been previously propounded, and to investigate the necessary chromatic effect of the yellow spot on the retina, the colour of the choroid coat, and of the tapetum lucidum in animals, and the vision of Albinoes. These inquiries did not lead to an explanation of the matter, but they were interesting in themselves, and gave rise to two special papers,[1] which he

[1] On the Extent to which the received Theory of Vision requires us to regard the Eye as a Camera Obscura.—'Trans. R.S.E.' vol. xxi. part ii.

On the Transmission of the Actinic rays of light through the Eye, and their relation to the Yellow Spot of the Retina.—'Trans. R.S.E.'

read before the Royal Society of Edinburgh. From the frequency of this defect, Dr. Wilson perceived the danger attending the use of red and green signals on railways, and of the red and green lamps on the port and starboard sides of our naval and mercantile steam-vessels, and of the use of the same colours in light-houses. He brought the matter before the notice of the Royal Scottish Society of Arts, and the attention of the railway companies was seriously drawn to the necessity of examining their engine-drivers as to their ability to distinguish the coloured signals. The whole of his observations on this subject were published as a separate work, entitled 'Researches on Colour Blindness.'[1]

Another of Dr. Wilson's important investigations was "On the action of dry gases on organic colouring matters, and its relation to the theory of bleaching,"[2] from which, after experimenting with various gases and solvents, both in darkness and sunlight, he drew the conclusion, that "chlorine can bleach though oxygen be absent; neither water nor any other liquid is essential to the decolorising action of chlorine, otherwise than as enabling the gas and the colour to come within the sphere of chemical action, by dissolving both. A similar conclusion, *mutatis mutandis*, may be extended to oxygen, sulphurous acid, hydrosulphuric acid, and hydrochloric acid, but with this qualification, that specific differences may be expected to occur with all the gases named, as to their action on any one colouring matter, and with different colouring matters as to their deportment with any one of the gases."

Beside these researches, Dr. Wilson attempted to decide the question of the decomposition of water into its constituent gases by heat alone, by analyzing the bubbles that rise when the red-hot drop of oxide that is produced during the combustion of iron in oxygen falls into water; but this neither confirmed nor disproved the views of Professor Grove.[3] He read communications also before the Royal Society of Edinburgh, "On Dr. Wollaston's argument from the limitation of the atmosphere as to

[1] Sutherland & Knox, Edinburgh.
[2] 'Trans. R.S.E.,' vol. xvi. part iv.
[3] 'Quarterly Journal of Chemical Society.' 1847.

the finite divisibility of matter;"[1] and on the probability of the nitric acid sometimes found in the air being one source of the nitrogen found in plants.[2] As to chloroform, at one time he took its specific gravity,[3] at another he observed the strange phenomena of capillary attraction which it exhibits;[4] and yet again he wrote on "Chloroform as an anæsthetic from a patient's point of view." He once published an analysis of a supposed meteoric stone; and then he turned to discover in which organs lead accumulated, when some horses were slowly poisoned by that metal; he observed the crystallization of bi-carbonate of ammonia in spherical masses, or speculated on the origin of the diamond.[5] Most varied, too, were the subjects on which he gave practical suggestions,—the electro-magnetic bell, for experiments on the conduction of sound;[6] oxygen, for the restoration of our half-drowned fellow-creatures;[7] and artificial sea-water for our actiniæ.[8]

AS A TECHNOLOGIST.

Long before Dr. Wilson's appointment as Regius Director of the Industrial Museum of Scotland, he had, in his laboratory practice, been led to investigate several of the chemical arts. He had even published papers bearing more or less on some of them, as, for instance, that already referred to, which elucidated the theory of bleaching. But when his mind was specially turned to the subject of Technology, he put all his heart into it. It appealed at once to his intellectual and his moral nature: there was a vast range of inquiry, not too profound; and what was better still, that inquiry had a direct bearing on the happiness of his fellow-men. In the formation of the Industrial Museum he worked hard; and those who have enjoyed the advantage, as I have, of being conducted by him through the rich stores in

[1] 'Trans. R.S.E.,' vol. xvi. part i.
[2] 'Trans. R.S.E.,' vol. xx. part iv.
[3] 'Monthly Journal of Medical Science.' 1848.
[4] 'Quarterly Journal of Chemical Society.' Vol. i.
[5] 'Edinburgh New Philosophical Journal.' 1850. [6] Ibid. 1846.
[7] 'Trans. R.S.S.A.' 1845.
[8] 'Edinburgh New Philosophical Journal.' 1855.

readiness for the future building, can alone appreciate the care and thought which must have guided him in the selection and arrangement of such varied materials. Most wonderful and refreshing too was it to behold the enthusiasm with which he bore his feeble body over a manufactory, peeping into every process, collecting samples, and gathering the workmen around him, who always seemed delighted to tell him all they knew, or to listen to his kind and instructive remarks. His technological course, too, was largely attended, and in his inaugural lecture for 1855[1] he explained the nature of Technology as the science of the utilitarian arts, and expressed his intention of at once giving a systematic course, "so that the Museum will minister to the Chair, not the Chair wait upon the Museum.' The plan of the course is thus described in a recent article in the 'North British Review,' quoting from his class syllabus:—

"The course was divided into mineral, vegetable, and animal technology. Under the first were included the relation of the atmosphere, the ocean and tributary waters, and the earth, to Technology; and among special subjects, fuel, building material, glass and glass-making, pottery, earthenware, stoneware, and porcelain; metallotechny, electrotechny, and magnetotechny. Under the second, or vegetable technology, were considered saccharo-amylaceous substances, sugar-making, albuminous substances, and fermentation, distillation, wood and wood fibres, textile tissues, bleaching, dyeing, calico-printing, paper-making, scriptorial or graphic industrial arts, caoutchouc, gutta-percha, and the resins, fats, and oils. Under the third section, or animal technology, were included the mechanical application and chemical products of bones, ivory, horns, hoofs, tortoiseshell, shells, and corals; skins, tanning, fish-scales, hair, fur, wool, bristles, quills, and feathers, animal refuse."

The introductory prelection of the following year was on the physical sciences which form the basis of Technology;[2] and for 1858 and 1859 he chose the progress of the telegraph.[3] He

[1] 'What is Technology?' Sutherland & Knox.
[2] Printed in the 'Edinburgh New Philosophical Journal.' January 1857.
[3] Published as a separate treatise by Macmillan & Co.

pressed the importance of this study on many classes of the community in lectures which have been separately published. Thus he taught the farmers of the Highland and Agricultural Society how deeply interested they are, or ought to be, in the advance of the useful arts. He brought the subject before the Pharmaceutical Chemists, and before the Company of Merchants, urging on them their fourfold duty "to gather workable materials from the ends of the earth; to send forth finished products, derived from these, to the four quarters of the heavens; to employ the most perfect mechanical and chemical appliances which can change the one into the other, and facilitate their transmission throughout the world; to encourage new arts, and hope for still newer ones;" and lastly, as a Christmas lesson, he taught in the National Galleries the relation of ornamental to industrial art, showing that while Beauty remains Beauty, the Beast Utility may become "a graceful Prince, losing the clumsiness, but keeping the strength of his former state, and Prince and Princess join hands, each possessed of gifts which the other has not. Not like to like, but like in difference."

Not merely as Director, or rather collector of the Museum, and as Professor of Technology, did Dr. Wilson advance the cause of this science which he had made his own, but also as President of the Royal Scottish Society of Arts. He found time too for writing on such subjects: as, for instance, two papers on Photography,[1] full of ingenious suggestions; articles in the 'Builder' on the Chemistry of Building Materials; and a little monograph on Paper, Pen, and Ink, which appeared in 'Macmillan's Magazine' for last November, the same month in which ceased his labours for the material and mental advancement of his brother men.

[1] On the Production of Photographs on Fluorescent Surfaces.—'Journal of Photographic Society.' 1857.

On Dryness, Darkness, and Coldness as means of preserving Photographs from fading.—Ibid. 1859.

Some of the theoretical views expressed in the first of these papers, relating to the slight photographic effect of fluorescent substances, I have had the pleasure of proving experimentally to be correct. For some curious photographic observations of Dr. Wilson, see also 'Cosmos,' Nov. 11, 1859, p. 543.—J. H. G.

AS A SCIENTIFIC HISTORIAN AND BIOGRAPHER.

In the preface to his 'Life of Cavendish,' Dr. Wilson says:—"During the enforced leisure of a long illness, I commenced in 1842 to collect materials for a projected work on the lives of the chemists of Great Britain, in which Cavendish should occupy a prominent place, and I had made some progress in my task when the Cavendish Society was founded. . . . When, however, at the call of the Society, I laid aside the more general undertaking in which I was engaged, and turned my attention solely to the works and character of the Honourable Henry Cavendish, circumstances had occurred which gave him an importance in the eyes of the lettered public such as no other chemist at the time possessed." And well and laboriously did Dr. Wilson portray the great philosopher, and unravel the mysteries of the water controversy. His description of the man isolated from his fellows is quite photographic; and after once reading it, we have always a mental portrait of him wandering about the house at Clapham, inspecting his thermometers and rain-gauges, dining his few friends off the invariable leg of mutton, and indifferent to objects that excite or gratify the imagination, emotions, or higher affections. "His theory of the universe seems to have been, that it consisted *solely* of a multitude of objects which could be weighed, numbered, and measured; and the vocation to which he considered himself called was, to weigh, number, and measure, as many of those objects as his allotted threescore years and ten would permit." From a lengthy review of all the documents bearing upon the subject, Dr. Wilson came to the conclusion that as far as the discovery of the composition of water by synthesis is concerned, Cavendish has the highest claim; and when, some years afterwards, other documents came to light, he had the satisfaction of finding that his view of the case was fully established; and this more complete vindication of the priority of Cavendish he brought before the public in the 'Athenæum,' and before the Royal Society of Edinburgh.

Dr. Wilson never carried out his projected work on the lives of the chemists, but he has left behind various monographs on

Wollaston, Black, Robert Boyle, and Dalton.[1] His biographical sketches, too, were not confined to chemists; and at the period of his death he was engaged on the memoir of his fellow-student and colleague, the late Professor Edward Forbes. The only complete biography, however, besides that of Cavendish, which we possess from his pen, is that of Dr. John Reid, and this is rather a literary than a scientific work; but it contains such a portrait as could be only delineated by a man who at the same time felt the interest of Dr. Reid's physiological discoveries, and appreciated his religious life.

Dr. Wilson's attention was directed to the history of apparatus as well as of the inventors themselves, and he urged upon his contemporaries the preservation of those models and actual machines which represent the earliest forms of important engines.[2] In 1849 he published a paper on the early history of the air-pump in England,[3] with diagrams of the different machines, in which he rectified errors that other historians had fallen into; and those who were present at the opening of the chemical section of the British Association at Aberdeen will remember the beautiful diagrams with which he covered the walls, in illustration of his further researches in the same direction. In another paper,[4] he claims as the earliest electrical machine, not Otto von Guericke's famous sulphur ball, but an electrical fish; he points out the antiquity and generality of the practice of using such fishes as remedial agents, and brings together an immense store of information from many unheard-of sources respecting the Torpedo, the Silurus of the Nile, the Gymnotus, and especially the Malapterurus Beninensis, which is found in the muddy brackish waters of the rivers of Old Calabar, and appears to be put by the native women into the tubs in which they wash their children, in the belief that its shocks render them healthy and strong. Under this head I may also class the paper on the fruits of the Cucurbitaceæ and Crescentiaceæ,[5] in which he shows

[1] 'British Quarterly Review.'

[2] See his Address as President of the Royal Society of Arts, 1857.

[3] 'Edin. New Phil. Journal,' April 1849.

[4] On the Electrical Fishes, as the earliest Electric Machines employed by Mankind. — 'Edin. New Phil. Journal,' October 1857.

[5] 'Trans. Bot. Soc. Edin.,' vol. vi.

by a similar accumulation of miscellaneous lore, that different species of gourds furnish the models for different utensils, namely, the long-necked bottle with the egg-shaped body, the constricted pilgrim's bottle, and the cupping-glass.

AS A TEACHER AND EXPOUNDER.

While many of Dr. Wilson's contemporaries could pursue a train of research with greater ability, none perhaps could render the new truth thus obtained so attractive by copious imagery and varied illustration. The expansiveness of his style, which led to his strictly scientific works being considered in some quarters too diffuse, is a beauty in those where he appears as the illustrator of our physical knowledge, for every figure tells, and every fresh point of view has its own peculiar value. His popularity as a lecturer, both with his students and with the public at large, was very great. This arose partly from his thorough knowledge of the subjects he handled, but more from the felicity of his descriptions, the clearness of his explanations, and the poetry and pathos which rendered the whole beautiful. His little book on chemistry in 'Chambers's Educational Course,' which is adapted for those who desire a knowledge of the fundamental principles and leading facts of the science, without entering into any great detail, has already attained a sale of upwards of twenty-four thousand, and that prose poem, the 'Five Gateways of Knowledge,[1] has led many to find a new world of thought and enjoyment in the old region of their five senses. His treatise on Electricity and the Electric Telegraph[2] gives a most intelligible account of this wonderful agency; and the 'Chemistry of the Stars' shows how he could carry the fancy of his readers forward from the results of dry analysis.

As instances of the extraordinary clearness with which Dr. Wilson illustrated difficult points, I would refer to his exposition of the numerical laws of chemistry in the educational treatise just mentioned, which I think the most easily comprehensible in existence, and to his more popular description of the nervous system, given in Dr. Reid's Life.

[1] Macmillan and Co., Cambridge.

[2] These are printed together, and constitute Part 26 of the 'Travellers' Library.'

The beauty of Dr. Wilson's discourses and writings depended not a little on his religion, and on his fine æsthetic taste. His quotations from the Holy Scriptures, and references to spiritual things, were frequent, not in the form of a pious deduction dragged in uncomfortably at the end of a lecture, but as the natural reflections of a mind thoroughly embued with the love of God and man, and accustomed to refer every good gift to the Father of Lights. In his addresses to medical or other students, he delighted to draw attention to the great facts of the spiritual world; but his 'Chemical Final Causes'[1] is the only one of his scientific writings which has a deliberately theological character. In it he attempts to add to the ever-accumulating proofs of design, by showing especially that phosphorus, nitrogen, and iron, are the best adapted of the known elements for the purposes they are required to fulfil in animal organisms.

As to Dr. Wilson's æsthetic taste, he was an instance that a chemist is not one (to quote his own humorous description[2]) whose "vocation has been to prowl around, like a very demon, seeking what of the poet's property he might lay hands on and devour; to prove himself a man of the earth, earthy alike by profession and by relish for the work of a disenchanter, to whom a mystery is interesting only because it may be explained, and an object beautiful because the cause of its beauty may be discovered." The popular impression about some chemists, that "the aquafortis and the chlorine of the laboratories have as effectually bleached the poetry out of them, as they destroy the colours of tissues exposed to their action," certainly never arose from an acquaintance with Dr. Wilson. In his writings there is often a rhythmical charm and balance of expressions which suit well with the poetic quotations in which he sometimes freely indulges. As instances, I take almost at random from his discourse on the Progress of the Telegraph:—"We nicely discuss whether *telegram* is a proper word or not, and invoke the heroes of Homer to side with us for or against a term which would have tried every Greek tongue in its utterance and vexed every Greek ear in its hearing; and all the while the bees who

[1] 'Edin. Univ. Essays,' 1856.

[2] In 'The alleged Antagonism between Poetry and Chemistry.'

rejoice amidst the sugar plantations of our heather warn and welcome each other in songs which the bees of Hymettus sang to each other; and the grasshoppers signal from meadow to meadow as they did of old, when the musical shiver of their wings rang over Greece as its cradle-psalm." And again, speaking of the compass-needle "as the guide of Vasco de Gama to the East Indies, and of Columbus to the West Indies and the New World, it was pre-eminently the precursor and pioneer of the telegraph. Silently, and as with finger on its lips, it led them across the waste of waters to the new homes of the world; but when these were largely filled, and houses divided between the old and new hemispheres longed to exchange affectionate greetings, it removed its finger and broke silence. The quivering magnetic needle which lies in the coil of the galvanometer is the tongue of the electric telegraph, and already engineers talk of it as speaking."

One might almost think that Dr. Wilson was the living analogue of that astronomical fact which he thus describes:[1] "I would liken science and poetry in their natural interdependence to those binary stars, often different in colour, which Herschel's telescope discovered to revolve round each other. 'There is one light of the sun,' says St. Paul, 'and another of the moon, and another of the stars: star differeth from star in glory.' It is so here. That star or sun, for it is both, with its cold, clear, white light, is SCIENCE: that other, with its gorgeous and ever-shifting hues and magnificent blaze, is POETRY. They revolve lovingly round each other in orbits of their own, pouring forth and drinking in the rays which they exchange; and they both also move round and shine towards that centre from which they came, even the throne of Him who is the Source of all truth and the Cause of all beauty."

[1] In 'The alleged Antagonism between Poetry and Chemistry.'

APPENDIX B.

THE following notice of the Old Calton Burial Ground, and the historical reminiscences associated with it, is from the pen of Professor Daniel Wilson :—

"It stretches southwards to the brow of the precipice which overhangs the Old Town of Edinburgh, lying there at a depth of about a hundred feet below, and—where the crowded monuments and family enclosures admit of a peep beyond—the elevated site commands a wide view of the distant Pentlands, the Castle, with the Old Town piled up to its rocky heights, and the crowded avenues between the Old and New Towns, whence the busy hum reaches the ear, mellowed by the distance into sounds of life that mingle not unpleasantly with the echoes of that silent scene. The cemetery is of comparatively recent date; and though heaved into many a mouldering heap, its grassy mounds have few associations with illustrious names. Nevertheless the locality is not without its historical reminiscences; and from its commanding site, must have been a point of considerable importance both to the assailants and defenders of the Scottish capital, when in olden times it was guarded by embrasured wall and gate. Right below the crag, now crowded with the monuments of modern generations, there formerly stood the ancient Collegiate Church founded by the widowed Queen of the second Scottish James in 1462, and beyond it St. Anthony's Port, which commanded the northern entrance to the steep avenue leading to the Netherbow. A Roman causeway has been traced along the very base of the cliff; and the discovery of some fine red Saurian ware in 1815, when digging the foundations of the Post-office, which bounds the cemetery on the west, leaves no doubt that the footprints of the Roman conqueror have been there. An old map of 1544—the earliest memorial of Edinburgh topography—now preserved in the British Museum, shows the Earl of Hereford with his army occupying the Calton Hill, before putting the city to fire and sword, according to the barbarous

instructions of Henry VIII., who took this way of forcing an alliance between the infant Queen Mary and his son Edward. But a more definite account, pertaining to a later year of the same unfortunate Scottish Queen, points out the locality of the modern cemetery as the site of batteries erected by the Regent Lennox in 1572, when the castle and city were held by the brave Sir William Kirkaldy of Grange on behalf of the Queen. The Regent's party were bent on holding a Parliament within the city; and the 'Queen's men,' to prevent this, took possession of St. Giles's Church, and manned the steeple, which completely commanded the Parliament House. Thereupon the Estates (*i.e.*, the Scottish Parliament) assembled in the Canongate, without the walls, but within the liberties of the city, which extended to St. John's Cross; and a battery was erected for their protection —as the gossiping old Diarist chronicles in the 'Diurnal of Occurrents,'—upon 'the Dow Craig abone the Trinity College beside Edinburgh, to ding and siege the north-east quarter of the burgh.' This Dow (Gaelic, *Du* or black) Craig is undoubtedly the spot. The Calton Hill, with the adjacent suburban district of Calton, belonged to the barony of the Lords Balmerinoch, and in the earlier part of the 18th century the last Lord Balmerinoch, who perished on the block in 1746 for his fidelity to the Stuarts, presented the Dow Craig and adjacent ground to his Calton vassals as a public cemetery. Since then the rugged scene of foreign violence and rude civil strife has been dedicated to the sacred rites, where all that is mortal of many a loved one has been laid to rest, earth to earth; and the hallowed spot is consecrated by many a humble memorial of affection, clustering around the mausoleum of the great philosopher and sceptic, David Hume, to which has since been added by pious hands the sculptured emblem of the Christian's hopes,—looking like an afterthought, appended by later hands, to some old pagan Roman's sepulchre."

APPENDIX C.

TITLES OF WORKS AND PAPERS PUBLISHED BY PROFESSOR GEORGE WILSON.

WORKS.

Chemistry: an Elementary Text-Book. W. & R. Chambers, Edinburgh. 1850.

The Life and Works of the Honourable Henry Cavendish; including a Critical Inquiry into the relative claims of all the alleged Discoverers of the Composition of Water. Printed for the Cavendish Society. 1851.

The Life of Dr. John Reid, late Chandos Professor of Medicine in the University of St. Andrews. 1852. Second Edition. Sutherland and Knox, Edinburgh.

The Travellers' Library, No. 26.—Electricity and the Electric Telegraph (Reprinted from the Edinburgh Review). The Chemistry of the Stars (Reprinted from the British Quarterly Review). 1852.

Researches on Colour-Blindness. Sutherland and Knox. Edinburgh. 1855.

The Five Gateways of Knowledge. Macmillan & Co., Cambridge and London. 1857. Second Edition.

PAPERS ON CHEMISTRY AND PHYSICS, CHIEFLY CONTRIBUTED TO TRANSACTIONS OF SCIENTIFIC SOCIETIES.

1839.

Inaugural Dissertation on the Existence of Haloid Salts in Solution. Read before British Association in 1839: published in Edinburgh Academic Annual for 1840.

1842.

Chemical Analysis of Organic Fluid, in which Sarcina Ventriculi was first detected. Edinburgh Med. & Surg. Journal, No. 151.

1844.

On Isomeric Transmutation. Edinburgh Philosophical Journal.

Account of a Repetition of several of Dr. Samuel Brown's Processes for the Conversion of Carbon into Silicon. By George Wilson, M.D., and John Crombie Brown, Esq. Trans. R.S.E.

1845.

On the Employment of Oxygen as a means of Resuscitation in Asphyxia, and otherwise as a Remedial Agent. Trans. R.S.S.A.

On a Simple Mode of constructing Skeleton Models to illustrate the Systems of Crystallography. Trans. R.S.S.A.

On Wollaston's Argument from the Limitation of the Atmosphere, as to the Finite Divisibility of Matter. Trans. R.S.E.

1846.

On the Solubility of Fluoride of Calcium in Water, and its Relation to the occurrence of Fluorine in Minerals, and in Recent and Fossil Plants and Animals. Trans. R.S.E.

On the Applicability of the Electro-Magnetic Bell to the trial of Experiments on the Conduction of Sound, especially of Gases. Trans. R.S.S.A., and Edin. New Phil. Journal.

1847.

On the Decomposition of Water by Platinum and the Black Oxide of Iron at a white heat; with some Observations on the Theory of Mr. Grove's Experiments. Memoirs of Chemical Society, London.

1848.

On the Specific Gravity of Chloroform, and its Superiority, when pure, as an Anæsthetic. Edin. Monthly Journal of Medical Science.

On some Phenomena of Capillary Attraction observed with Chloroform, Bisulphuret of Carbon, and other liquids. Journal of Chemical Society, London.

On the Action of Dry Gases on Organic Colouring Matters, and its Relation to the Theory of Bleaching. Trans. R.S.E.

On the Argument for the Binary Theory of Salts from the Non-action of Anhydrous Oxygen Acids on Organic Colours. Memoirs of Chemical Society, London.

1849.

On the Early History of the Air-Pump in England. Read to the R.S.E.: published in Edin. Phil. Journal.

On the Extraction of Mannite from the Root of Dandelion. Trans. R.S.E.

1850.

On the Crystallization of Carbon and the Possible Derivation of the Diamond from Graphite and Anthracite. Read to R.S.E.: published in Edin. Phil. Journal.

On the Presence of Fluorine in Different Ocean Waters. Read to R.S.E.: published in Edin. Phil. Journal.

On the Presence of Fluorine in Blood and Milk. Read to British Association: published in Edin. Phil. Journal.

1852.

On the Organs in which Lead accumulates in the Horse in Cases of Slow Poisoning by that Metal. Read to R.S.E.: published in Edinburgh Monthly Medical Journal.

1852.

On Two New Processes for the Detection of Fluorine when accompanied by Silica; and on the Presence of Fluorine in Granite, Trap, and other Igneous Rocks, and in the Ashes of Recent and Fossil Plants. Trans. R.S.E.

On a supposed Meteoric Stone, alleged to have fallen in Hampshire in September 1852. Trans. R.S.E.

1853.

On Nitric Acid as a Source of the Nitrogen found in Plants. Trans. R.S.E.

1855.

On Colour-Blindness in Relation to the Danger attending the Present System of Railway and Marine Coloured Signals. Trans. R.S.S.A. Reprinted as Supplement to Researches on Colour-Blindness.

On the Extent to which the received Theory of Vision requires us to regard the Eye as a Camera Obscura. Trans. R.S.E.

On the Artificial Preparation of Sea-Water for the Aquarium. Read to British Association: published in Edin. New Phil. Journal.

1856.

On the Transmission of the Actinic Rays of Light through the Eye, and their Relation to the Yellow Spot of the Retina. Trans. R.S.E.

1857.

On M. J. Nicklé's Claim to be the Discoverer of Fluorine in the Blood. Read to R.S.E.: published in Edin. New Phil. Jour.

On the Electric Fishes as the Earliest Electric Machine employed by Mankind. Read to Brit. Assoc.: published in Edin. New Phil. Jour.

On the Production of Photographs on Fluorescent Surfaces. Journal of Photographic Society.

1859.

On the Recent Vindication of the Priority of Cavendish as the Discoverer of the Composition of Water. Read to R.S.E.: published in Athenæum.

On Dryness, Darkness, and Coldness, as means of preserving Photographs from fading. Journal of Photographic Society.

On the Fruits of the Cucurbitaceæ and Crescentiaceæ. Trans. Edin. Botanical Society; and Edin. New Phil. Journal.

On some of the Stages which led to the Invention of the Modern Air-Pump. Read to Brit. Assoc. Report of B.A. for 1859. *In brief abstract.*

On the Employment of the Electric Eel, *Gymnotus Electricus*, as a Medical Shock-Machine, by the natives of Surinam. Do. do.

On the Statistics of Colour-Blindness. Do. do.

PUBLISHED LECTURES AND ADDRESSES.

1845.

On the Alleged Antagonism between Poetry and Chemistry.—Torch. Sutherland & Knox.

1849.

On the Sacredness of Medicine as a Profession.

1850.

Introductory Address delivered at the opening of the Medical School, Surgeons' Hall, Edinburgh.

1854.

On the Chemistry of Building Materials. Trans. Architectural Institute, Edinburgh.

Recent Scientific Ballooning. British Quarterly Review.

1855.

What is Technology? Sutherland & Knox.

1856.

On the Physical Sciences which form the Basis of Technology. Sutherland & Knox.

The Objects of Technology and Industrial Museums. Do.

On the Relation of Ornamental to Industrial Art. Edmonston & Douglas, Edinburgh.

On Pharmacy as a Branch of Technology. Pharmaceutical Journal.

On the Relations of Technology to Agriculture. Trans. of Highland Society.

Chemical Final Causes. Edin. University Essays. A. and C. Black.

On the Character of God as inferred from the Study of Human Anatomy. A. and C. Black, Edinburgh.

Addresses as President of Royal Scottish Society of Arts. Trans. R.S.S.A.

1857.

The Industrial Museum of Scotland in its Relation to Commercial Enterprise. Printed for Private Circulation.

1858.

The Progress of the Telegraph, being the Introductory Lecture on Technology for 1858-59. Macmillan and Co.

1859.

The Education of the Pharmaceutical Chemist. Pharmaceutical Journal.

Paper, Pen, and Ink. An Excursus in Technology. Macmillan's Mag.

BIOGRAPHICAL SKETCHES.

1845.

Life and Discoveries of Dalton. British Quarterly Review.

1846.

Sketch of the Life and Works of Wollaston. British Quarterly Review.

1849.

Sketch of the Life and Works of the Hon. Robert Boyle. Do.

A few unpublished Particulars regarding the late Dr. Black. Trans. R.S.E.

1856.

Sketch of James Wilson, Esq. of Woodville. Edin. New Phil. Journal.

MISCELLANEOUS.

The Grievance of the University Tests: A Letter addressed to the Right Hon. Spencer H. Walpole, Secretary of State for the Home Department. Sutherland and Knox. 1852.

Anæsthetics in Surgery, from a Patient's Point of View. Simpson's Obstetric Memoirs, vol. ii.

POEMS IN BLACKWOOD'S MAGAZINE.

To the Stethoscope. March 1847.
To Professor Edward Forbes. 1855.
The Atlantic Wedding Ring. 1858.

IN MACMILLAN'S MAGAZINE.

The Sleep of the Hyacinth. 1860.

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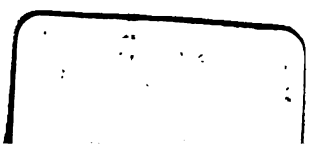
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